DRAFT
GREENHOUSE GAS REDUCTION PLAN

Prepared For

City of La Quinta
78-495 Calle Tampico
La Quinta, California 92253

Prepared By

Terra Nova Planning & Research, Inc.®
42635 Melanie Place, Suite #101
Palm Desert, CA 92211

July 2012

TABLE OF CONTENTS

LIST OF TABLES

LIST OF CHARTS

APPENDICES

I. EXECUTIVE SUMMARY

Climate change is linked to rising sea levels, reduced snowpack, prolonged droughts, increased flooding, changes to species ranges, and more intense storm events. The primary reason for the rise in global temperatures has been identified as greenhouse gas production, particularly since industrial processes began to be more prevalent worldwide. Greenhouse gases include carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride, and aerosols, and are created from the burning of fossil fuels mainly from transportation, energy production, and industrial processes.

California releases approximately two percent of the world's greenhouse gas emissions, making it the fifteenth largest emitter of greenhouse gases in the world. To reduce greenhouse gas emissions, California passed the Global Warming Solutions Act (AB 32) in 2006. AB 32 calls for reducing greenhouse gases to 1990 levels, or 427 million metric tons of carbon dioxide equivalent (CO2e) by the year 2020. These reductions will come from a variety of sources, and the State has called on local governments to reduce their share of greenhouse gases.

La Quinta is committed to reducing greenhouse gas emissions within its jurisdiction and has prepared this Greenhouse Gas Reduction Plan as a first step towards achieving this goal.

The City collaborated with utility providers and drew from a variety of technical studies, reports, and records to conduct the community wide and government specific greenhouse gas inventory. The inventory establishes 2005 as the baseline year and projects future year emissions based on 2005 emission levels. La Quinta has set forth reduction targets consistent with AB 32 and aims to reduce CO2e emissions to 10 percent below 2005 levels by 2020 and 28 percent below 2005 levels by 2035.

Emissions and emission reductions have been calculated for both municipal activities and community wide activities. Each category is briefly described below.

Municipal Activities

The baseline inventory includes greenhouse gas emissions from the use of energy for government buildings and facilities and operation of City streetlights and traffic signals, transmission and conveyance of water and wastewater, as well as fuel combustion from employee commute and operation of the City and Police Fleets.

The following chart shows the municipal GHG trend under "business as usual[1]" conditions, the 2005 baseline level of 9,807 metric tons of CO2e, the 2020 reduction target of 8,826 metric tons of CO2e, and the 2035 reduction target of 7,061 metric tons of CO2e.

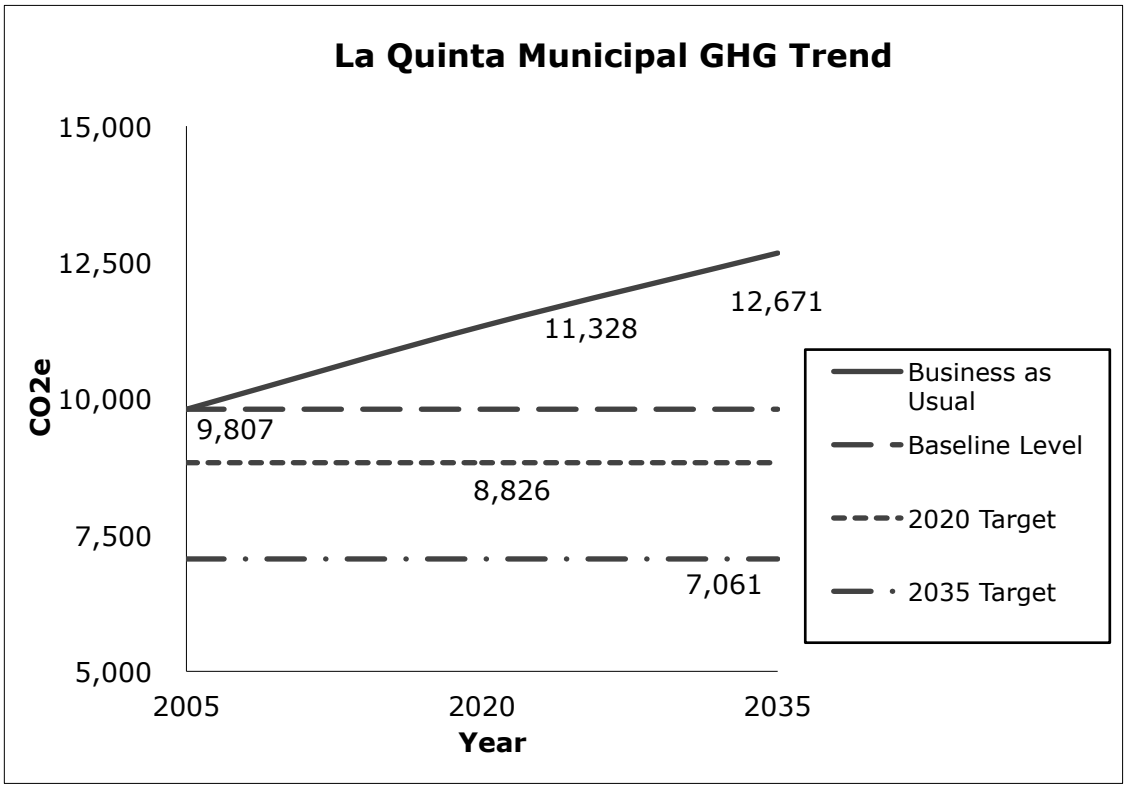


Chart 1: Municipal GHG Trends and Targets

Community Wide Activities

The baseline inventory includes greenhouse gas emissions from the use of energy for the residential and commercial sectors, fuel combustion from transportation, and the disposal of solid waste associated with residents' and businesses' activities within the City of La Quinta.

[1] Business as Usual is defined as the amount of CO2e generated if no reduction strategies are undertaken.

The following chart shows the community-wide GHG trend under business as usual conditions, the 2005 baseline level of 460,946 metric tons of CO2e, the 2020 reduction target of 414,852 metric tons of CO2e, and the 2035 reduction target of 331,881 metric tons of CO2e.

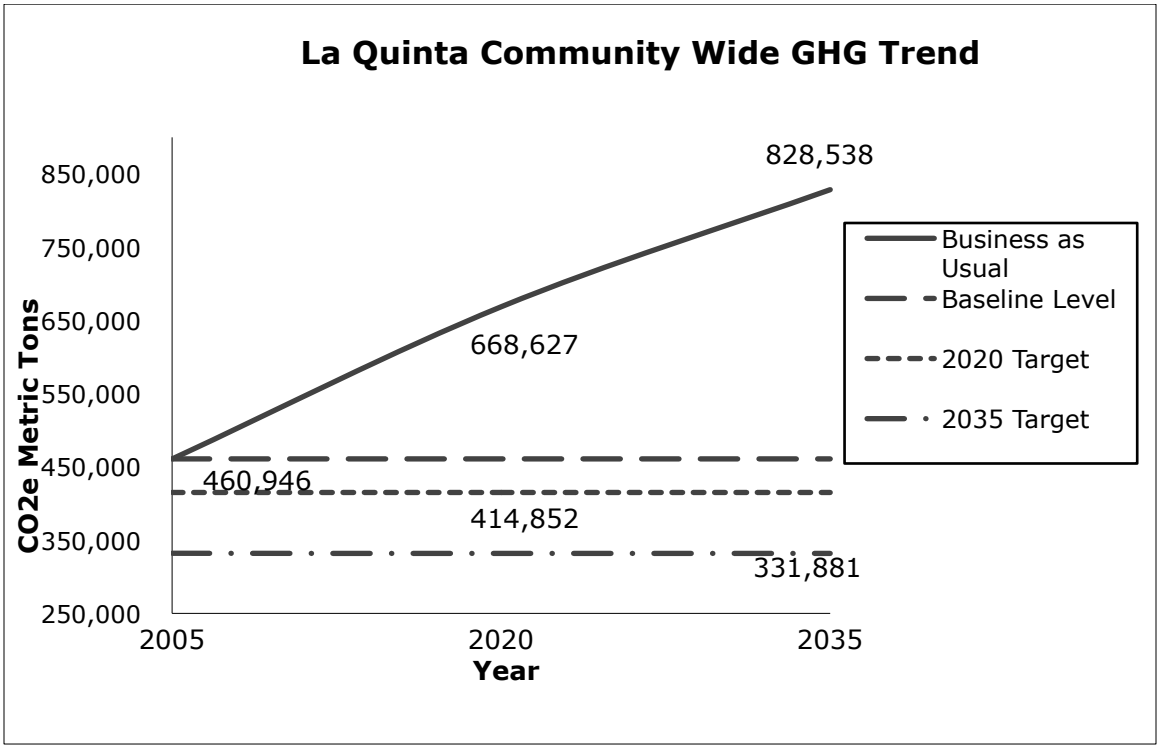


Chart 2: Community Wide GHG Trends and Targets

II. INTRODUCTION

Climate change is a natural, cyclical phenomenon that has occurred throughout geological time. The Earth has gone through varying natural climate cycles, including glacial periods and interglacial periods. Prior to industrialization, theses cycles occurred naturally. However, recent changes to climatic conditions are linked to human activities, including the elevated concentrations of greenhouse gases being emitted into the atmosphere. The effects of climate change are linked to rising sea levels, reduced snowpack, prolonged droughts, increased flooding, changes to species ranges, and more intense storm events.

Between 1961 and 1990 the Earth's mean surface temperature was about 14°C degrees Celsius, or 57.2°F degrees Fahrenheit. The Intergovernmental Panel on Climate Change has reported that global mean temperatures have risen 0.74°C (1.33°F) degrees Celsius between 1906 and 2005, primarily due to industrialization. Industrialization has resulted in greenhouse gases that include carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and aerosols. Most are created from the burning of fossil fuels, mainly from transportation, energy production, and industrial processes.

California releases approximately two percent of the world's greenhouse gas emissions, making it the fifteenth largest emitter of greenhouse gases in the world. California has begun to see the early effects of climate change, including reduced snowpack, more frequent droughts, and rising sea levels. See Appendix A for further information on the cause and effects of climate change.

To curb greenhouse gas emissions, California passed the Global Warming Solutions Act (AB 32) in 2006. AB 32 calls for reducing greenhouse gases to 1990 levels State-wide, or a reduction of 427 million metric tons of CO2e by the year 2020. These reductions will come from a variety of sources, and the State has called on local governments to reduce their share of greenhouse gases.

Purpose and Intent of the Reduction Plan

La Quinta is committed to reducing greenhouse gas emissions within its jurisdiction and has prepared this Greenhouse Gas Reduction Plan as a first step towards achieving this goal. The greenhouse gas reduction plan includes a comprehensive inventory of greenhouse gas emissions generated City-wide, including those generated by local government activities. Future emissions of greenhouse gases are

projected, reduction targets set, and policies and programs are proposed as part of the Greenhouse Gas Reduction Plan.

To be consistent with AB 32 and executive order S-3-05, the reduction target is to achieve 1990 level emissions by 2020, and 80% below 1990 levels by 2050.

While more stringent requirements for building standards and vehicle fuel efficiency are being enacted on a statewide level, such as through updates to the California Building Code (Title 24), and SB 375, the City of La Quinta will comply with statewide efforts and act locally to monitor, evaluate, and amend local policies and programs in order to achieve targeted emission reductions.

The first task in preparing a Greenhouse Gas Reduction Plan is to conduct a City-wide and municipal-specific inventory. Given that accurate data for 1990 is not readily available and there are some disadvantages to back-casting, the preferred approach is to use 2005 as the base year, with a reduction target of 10% below 2005 levels. To quantify the reductions that will be necessary in order to achieve the target, a 2020 forecast under business as usual conditions is conducted.

The 2020 forecast shows what the City-wide and municipal-specific GHG emissions will be, assuming growth and development, under business as usual conditions (that is to say under current operating conditions). The difference between emissions forecast for 2020 and the reduction target emission level of 10% below 2005 levels yields the emission quantity required to achieve the target.

Achieving a reduction target below 2005 levels requires that all new development not contribute emissions, and existing GHG emitters reduce emissions by over 10%. Alternatively and more practically, new development limits emissions to the greatest extent feasible, and existing emitters make up the difference needed to achieve targeted reductions through retrofits, equipment upgrades, and conservation. Given that the City of La Quinta is approximately 80% built out, most of the City's emissions are, and will be generated by existing development. Reductions achieved for this sector will yield the greatest results.

This Greenhouse Gas Reduction Plan is the City's first attempt at establishing a greenhouse gas emission baseline and proposing policies, programs and measures intended to achieve quantifiable emission reductions. As data collection techniques are refined and additional information becomes available it may be prudent to amend the baseline, refine measures, and expand effective programs as deemed appropriate.

Consistent with the statewide effort to reduce emission levels to 80% of 1990 emission, the 2035 target relative to 2005 is set at 28%. The City of La Quinta intends to reduce emission levels to 28% of 2005 levels by the year 2035.

The Greenhouse Gas Reduction Plan is intended to serve as a guide that can be used to achieve targeted reductions. Rather than requiring specific actions, the plan establishes the intent of achieving reduction targets and provides a method of quantifying how the reductions will be achieved by including various ways GHG emissions can be reduced and by how much.

The City of La Quinta is committed to leading by example and has identified a number of policies and programs that will be enacted to curb GHG emissions. Efforts include the development and implementation of programs, collection, review and monitoring of data, and periodic generation of reports to track progress towards achieving reduction targets. The goal to reduce GHG emissions City wide is an ongoing effort that will require staff time, funding, community participation and other resources. The effort to reduce GHG emissions and successful implementation of programs to achieve that goal will result in a more livable vibrant community where enhanced air quality, economic vitality, and sustainable growth is realized.

For new projects that are consistent with the General Plan, City staff can assist project proponents in identifying reduction measures and incorporating design features that implement the Greenhouse Gas Reduction Plan. For projects that require a General Plan amendment it should be recognized that GHG impacts are not necessarily accounted for in the GHG Reduction Plan and will require independent GHG analysis and mitigation measures to assure that the project does not conflict with or jeopardize implementation of the Greenhouse Gas Reduction Plan.

As mentioned, a concerted effort will need to be made to achieve the necessary reduction targets, especially for existing development. These may include interagency coordination to offer rebates and appliance upgrade assistance programs, incentives for older homes and structures to conduct retrofits and weatherization, partnerships with local and regional service providers to conduct audits and perform upgrades, and other such methods. Furthermore, successful implementation will require monitoring and review in order to evaluate and track the effectiveness of reduction measures. While this Plan offers ideas and methods to initiate the GHG reduction process, it is fully expected that as policies are enacted programs will be refined, new programs developed, and record keeping standardized to more precisely inform and evaluate the effectiveness of GHG reduction measures.

III. LA QUINTA CO_2E EMISSIONS INVENTORY

Scope of GHG Inventory

The La Quinta emissions inventory is intended to capture all GHG emissions generated by activities occurring within the City of La Quinta, including City Government operations. The inventory does not account for emissions generated by construction activities, long distance travel in or out of the region associated with residents and visitors, including plane, train and automobile trips, nor does it account for the GHG emissions resulting from the maintenance of golf courses including scalping, seeding, mowing, and associated activities.

Methodology and assumptions used to conduct the Community Wide inventory and the City of La Quinta Municipal Operations Inventory are described below.

A. Community Wide Inventory

The City-wide inventory utilizes energy and natural gas consumption data from the residential, commercial, and industrial sectors, as well as information from mobile sources and the solid waste sectors. Local utilities, IID, The Gas Company, and the Coachella Valley Water District have provided consumption data for the City of La Quinta. In some instances, as explained below, assumptions where made in order to estimate La Quinta's contribution of GHG emissions relative to the population, housing units, or number of households.

i. Methodology

Demographics

The assumptions made for La Quinta population, households and household size at the end of 2005 are shown in Table 1. For purposes of establishing a baseline, it was assumed that in 2005 there were a total of 18,762 housing units, 38,470 households and the population was 38,510.[2]

[2] Table 2: E-5 City/County Population and Housing Estimates, Revised 1/1/2006

Table 1
La Quinta Demographics

	Year 2000	Year 2005	Year 2007	Year 2009	Year 2010*
Population	26,082	38,510	42,721	44,421	37,467
Housing Units	12,878	18,762	21,058	21,491	23,489
Occupied	9,207	13,414	15,056	15,365	14,820
Persons per household	2.829	2.868	2.835	2.888	2.528

Source: DOF Table 2: E-5 City County Population and Housing Estimates, May 2010. It should be noted that: data for 2000 was revised as of 1/1/2001; Data for 2005 was revised as of 1/1/2006; Data for 2007 was revised as of 1/1/2008; Data for 2009 was revised as of 1/1/2010.
***** Actual data based on the 2010 U.S. Census Bureau.

From 2000 through 2005 it is estimated that the City of La Quinta grew by approximately 12,400 people, an increase of 32.27 percent. From 2005 through 2009 the City grew by approximately 5,911 people, an increase of 13 percent. The 2010 Census found that the population for La Quinta was 37,467, with 14,820 housing units occupied. As such, the per capita household population size for 2010 was 2.53.

Electricity

The Imperial Irrigation District (IID) is the electricity provider within the City of La Quinta. To obtain electricity consumption, IID conducted a database query for the City's 92253 zip code from January 1, 2005 through December 31, 2005. IID separates usage types based on rate categories, which is determined by how much load is utilized at the time each contract account is created. Data provided by IID, for the 2005 query, is presented in the table below.

Table 2
La Quinta Annual Electricity Use 2005

Categories	kWh	Accounts
Residential[1]	315,169,183	23,746
Commercial[2]	159,111,567	2,232

Source: Hugo Valdez, Business Analyst IID, Energy Management & Strategic Marketing, September 2010.
1. Includes Residential, Mobile Home, and Energy Assistance.
2. Includes Small and Large Commercial, and 6 accounts for agriculture.

It should be noted that IID also provided data based on zip code for streetlights, outdoor lights, and public authority. A separate query by account number was also conducted. Outputs varied between these two approaches, and IID was unable to provide an explanation for the apparent discrepancy. Therefore, for analysis purposes, the account specific query output data were utilized. The streetlight and traffic signal sector is included within the Government Specific analysis below.

Natural Gas

The Southern California Gas Company (SoCalGas) provided data for gas consumption within the City of La Quinta. The data was obtained by summarizing the 2005 monthly-billed natural gas consumption associated to the Legal Jurisdiction code for the City of La Quinta. The total number of facilities and total number of bill accounts identified for the City were also provided. Table 3 shows the data provided by the Southern California Gas Company for the City.

Table 3
La Quinta Natural Gas 2005

	Cubic Feet	Number of Facilities	Number of Bill Accounts
Residential	545,848,100	15,839	7,690
Commercial	146,301,900	261	104
Industrial	0	2	0

Data provided by Carol Sullivan, Southern California Gas Company, August 13, 2010.

SoCalGas uses facilities and bill accounts to identify natural gas consumption usage rates and prepare customer bills. A facility is identified when a natural gas line is put in place. Through December 31, 2005, there were 15,839 residential facilities, 261 commercial facilities, and 2 industrial facilities in the City.

A bill account is created when gas service is turned on and the account is active. For example, in 2005 two industrial facilities where constructed, but gas service was not initiated, which is why there are zero bill accounts and zero cubic feet of gas shown for industrial. The bill account is a customer identification number, but is not necessarily representative of households or meters. For example, several meters may be connected to a single bill account. In the City of La Quinta, where there are seasonal residents and businesses, bill accounts are low since holds are placed on accounts during the summer months.

Propane

The majority of residential and commercial land uses within the City utilize natural gas. However, some parts of the La Quinta Cove use propane gas, delivered by private companies to on-site tanks. For the purpose of this analysis, it was assumed that 3,000 residential homes do not have access to natural gas services and instead rely on propane. The assumption is derived from the difference between the Department of Finance household size for 2005, and SoCalGas' number of facilities for 2005. In addition, the number of homes in the Cove area was considered. The resulting estimate of 3,000 homes is a reasonable representation of the likely number of propane users in the City.

A typical single family home utilizes 1,000 gallons of propane annually.[3] Therefore, the total annual propane use within the City of La Quinta is estimated to be 30,000 gallons for the 2005 year.

Domestic and Wastewater Transport

The transport of domestic water and wastewater generates an energy demand associated with pumping, distribution, storage, and treatment. The Coachella Valley Water District is the water service provider for the City of La Quinta. For analysis purposes this sector is included within the Municipal Government discussion below.

Vehicle Miles Traveled

The 2010 peak season daily traffic within the La Quinta City limits was provided by Iteris, Inc., as part of the Traffic Report that was prepared for the 2010 General Plan Update. To estimate the peak daily trips for 2005, the 2010 figure was discounted by 13 percent, which is consistent with the growth in population that occurred during this timeframe. Based on the comparison of peak season and non-peak season volumes, the approximate annual average was calculated by reducing peak season numbers by 7%. Vehicle miles traveled was obtained by multiplying the average daily traffic by the average trip length, which is assumed to be 5 miles and is intended to capture all trips generated by land uses within the City of La Quinta.

Using this methodology, it was estimated that in 2005 the average daily vehicle miles traveled within the City of La Quinta was 937,363. The average annual miles traveled for 2005 was estimated to be 342 million.

Solid Waste

Burrtec is the waste disposal provider for the City of La Quinta. Burrtec prepares monthly reports that summarize waste collection activities. Monthly reports for 2007 were utilized, since data for the inventory year (2005) were not available. To estimate waste generation in 2005 a 9.86 percent reduction was applied to the 2007 figures. The percentage reduction is consistent with the percentage population growth that occurred between 2005 and 2007. The table below shows the estimated amount of waste produced within the City of La Quinta in 2005.

[3] Approximate for a 2,000 square foot unit with up to 4 people. Includes propane use for range and oven, clothes dryer, water heater, and space heater or forced air furnace.

Table 4 La Quinta Solid Waste 2005	
	Tons
Refuse/Residue	40,259.53
Compost	7,722.47
Recycle	8,295.83
Source: Derived from Burrtec Monthly Report for December 2007. Figures for 2005 were obtained by applying a reduction factor of 9.86 percent.	

ii. Baseline CO2e

The following discussion provides a detailed description of the resources utilized by specific types of land uses, and shows the associated carbon dioxide equivalence generated by each. In addition, all land uses are totaled to arrive at the community wide CO2e baseline for La Quinta in 2005, which is estimated to be 1,228,050 metric tons.

Electricity

Table 5 summarizes total annual kilowatt hours consumed by private development in 2005 in the City of La Quinta and presents the associated CO2e emissions generated by that level of use.

Table 5 La Quinta 2005 Baseline Electricity		
Categories	**kWh**	**CO2e**
Residential[1]	315,169,183	137,633
Commercial[2]	159,111,567	69,483
Total	**474,280,750**	**207,116**
Source: CACP Software 1. Includes Residential, Mobile Home, and Energy Assistance. 2. Includes Small and Large Commercial, and 6 accounts for agriculture.		

Natural Gas

Table 6 summarizes total annual cubic feet of natural gas consumed in 2005 by private development, and presents the associated CO2e emissions generated by that level of use.

Table 6 La Quinta 2005 Baseline Natural Gas		
	Cubic Feet	**CO2e**
Residential	545,848,100	29,879
Commercial	146,301,900	8,008
Total	**692,150,000**	**37,887**
Source: CACP		

Propane

Table 7 summarizes total CO2e emissions generated by the use of propane.

Table 7 La Quinta 2005 Baseline Propane		
	Gallons	**CO2e**
Residential	30,000	173

Vehicle Miles Traveled

Table 8 summarizes the estimated vehicle miles traveled in 2005 within the City of La Quinta, and presents the associated CO2e emissions generated by fuel combustion.

Table 8 La Quinta 2005 Baseline Transportation		
	Vehicle Miles	**CO2e**
Gasoline	318,187,727	173,357
Diesel	23,949,613	32,709
Total	**342,137,340**	**206,066**
Source: CACP		

Solid Waste

Table 9 shows the estimated amount of waste produced within the City of La Quinta for the year 2005, and the associated metric tons of CO2e emissions.

Table 9 La Quinta 2005 Baseline Solid Waste		
	Tons	**CO2e**
Refuse/Residue	40,259.53	9,703
Source: CACP		

Sector Summary

The table below shows the total metric tons of CO2e generated within the community for the 2005 baseline year for the City of La Quinta. The chart which follows displays the relative percentage contribution of CO2e from each sector.

Table 10 La Quinta 2005 Baseline (metric tons)	
	CO2e
Residential	167,686
Commercial	77,492
Transportation	206,066
Waste	9,703
Total	**460,946**
Source: CACP	

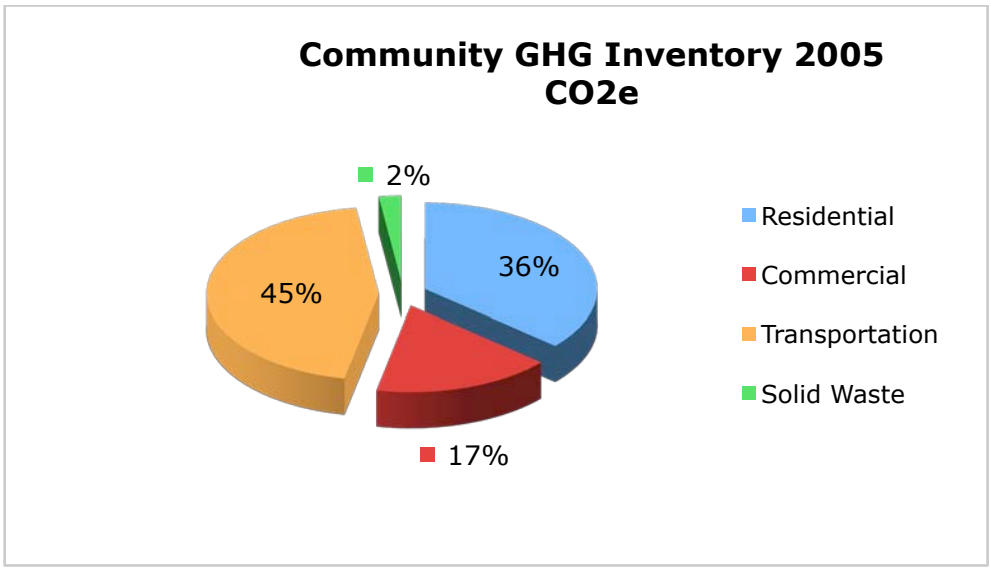


Chart 3: Community GHG Inventory by Sector

B. Government Specific Inventory

The municipal-specific inventory requires energy use information for buildings, transport of water and sewer, and streetlights and traffic signals. Information on waste generation rates and municipal mobile operations such as City-owned vehicles and employee commutes is also included.

i. Methodology

Facilities Data

The size of municipal facilities is utilized to determine per capita growth potential, employee growth potential, energy use per square foot, and other such indicators that may be useful in making relative comparisons. It was assumed that at the end of 2005, there were a total of 100 City employees. The table below shows indicators used to further understand and interpret the municipal facilities data.

Table 11
La Quinta Municipal Facilities

	Year 2005	Year 2007	Year 2009
Employee Count	100	101	102
Civic Center Square Feet	32,000	32,000	55,000
Library Square Feet*	20,000	20,000	20,000
Senior Center Square Feet	10,000	10,000	10,000

Source: City of La Quinta.
* Library remodel occurred in 2005. For analysis purposes 2009 data is used for establishing the library baseline.

Electricity

To obtain electricity consumption for municipal buildings and facilities, IID conducted a database query for each account number provided. (City specific account numbers were obtained from the La Quinta Department of Finance.) Account usage data provided by IID, for the 2005 query, are presented in the table below.

Table 12 Municipal Electricity Use 2005			
Categories	**kWh**	**Accounts**	**Square Feet**
Street lighting	1,311,439	172	N/A
Parks and Recreation	496,710	9	N/A
Public Works	77,720	3	12,000
Police	82,650	2*	4,726
Silver Rock	1,149,110	9	13,000
Fire Station #93	92,240*	1	7,700
Fire Station #32	57,040*	1	4,000
Fire station #70	65,280*	1	5,750
Civic Center	1,146,400	1	32,000
Library	509,120*	1	20,000
Senior Center	207,200	1	10,000
Source: Hugo Valdez, Business Analyst IID, Energy Management & Strategic Marketing, September 2010. * Indicates that only partial year data was available for 2005, therefore complete year data from 2009 was utilized.			

Natural Gas

The Southern California Gas Company (SoCalGas) provided natural gas consumption data for municipal specific accounts. Table 7 shows the data provided for La Quinta's municipal facilities.

Table 13 Municipal Natural Gas 2005	
Facility	**Cubic Feet 2005**
Civic Center	1,567,500
Library*	157,100
Senior Center*	639,400
Fire Station #93*	114,600
Data provided by Carol Sullivan, Southern California Gas Company, August 13, 2010. * Represents partial data or not fully operational in 2005, therefore 2009 figures are utilized.	

The following provides the rationale for the use of 2009 figures in place of 2005 data for the Library, Senior Center, and Fire Station #93 as noted in Table 13 above. In 2008, the Civic Center underwent a 22,000 square foot expansion. At that time, a new computerized system was installed to automatically run heating and cooling. Between 2005 and 2009, natural gas usage at the Civic Center was reduced by 631,800 cubic feet despite the expansion. This is in part attributed to the automation of the heating, ventilation and air conditioning system (HVAC). The 82,300 cubic foot reduction in natural gas consumption at the Library during the same time frame is in

part attributed to the automation of the HVAC system as described above. In addition, the community rental space that had been available in conjunction with the Library was relocated to the Senior Center. Furthermore, the Library expansion was completed in 2005, which resulted in a more efficient building envelope. The substantial increase in natural gas usage (556,000 cubic feet) at the Senior Center between 2005 and 2009 is due to the full operation of the facility and realization of the intended use (community rental space and operation of the kitchen). Fire Station #93 was built and began operation in the fall of 2005. Therefore, the 2005 figure for Fire Station #93, (26,500 cubic feet) represents only a few months of consumption. For reasons stated above, the Library, Senior Center, and Fire Station #93 use 2009 figures for natural gas consumption as the baseline, since they more closely represent annual consumption appropriate for baseline conditions.[4]

It should be mentioned that in addition to Fire Station #93, there are two other La Quinta Fire Stations: #70 and #32. These two stations do not use natural gas and rely solely on electricity to meet energy demands.

Propane

The City of La Quinta purchases propane for municipal operations primarily associated with the Public Works yard. The City utilizes 3-gallon tanks and in a given year typically purchases approximately eight tanks. On average, an estimated 24 gallons of propane are consumed annually.[5] Due to the limited scale and use of propane for municipal facilities, GHG emissions from propane are not included in this sector of analysis.

Water and Wastewater

The Coachella Valley Water District (CVWD) is the provider of potable water and sewage treatment services for the City of La Quinta. CVWD domestic water facilities include wells for pumping and production of potable water, distribution lines, elevated storage tanks and pumps to pressurize the system. Sewage treatment facilities include conveyance pipelines, lift stations, and treatment plants. All of these operation result in energy consumption. For analysis purposes energy consumption associated with facilities located within the City's jurisdiction were summarized.

Royce Jones, Associate Engineer, Electrical and Controls, CVWD, provided data on kilowatt-hour usage for all CVWD facilities located within La Quinta. The total annual energy consumption for all CVWD facilities within La Quinta was estimated to be

[4] Historic buildings and facilities information provided by Bret Butler, Eddie Hylton, and Tom Hartung, City of La Quinta, September 20, 2010. It should be noted that the Senior Center and Fire Station #93 have not undergone any substantially expansions or remodels between 2005 and 2009.

[5] Data provided by Louise West, Accounting Manager, City of La Quinta.

14,122,310 kWh in 2008. The year provided is considered to be representative of the 2005 year, and was utilized for analysis purposes.

In addition to CVWD facilities located within La Quinta, residents also generate wastewater effluent that is treated outside the City. Although technically outside of the La Quinta boundary, and therefore not included as part of the baseline figure, for disclosure purposes it is estimated that for the 2005 baseline year 3,119 metric tons of CO_2e were generated as a result of the sewage treatment process elsewhere in the Valley. This figure assumes a per capita CO_2 emission rate of 0.081 metric tons.

Vehicle Miles Traveled

Police Vehicle Fleet
The La Quinta Police Vehicle Fleet consists primarily of Ford Crown Victorias and one Chevy Impala. All police fleet vehicles use gasoline for their fuel type. For modeling purposes it was assumed that emissions from police vehicles are equivalent to emissions generated by full size autos. The mileage reported in 2009 totaled 556,351 miles for the year. As the police vehicle fleet has not grown substantially since 2005, it is assumed that a similar number of vehicle miles were traveled for the 2005 baseline year.

Public Works
The Public Works Department owns and operates several vehicles that use a variety of fuel types, including gasoline, diesel, and compressed natural gas. Make and model vary, but typically range from ½ ton pickups to 2½ ton dump trucks. Monthly mileage is reported for each vehicle, and were summed to determine yearly mileage for each fuel type. In 2009, there were a total of 146,138 miles from gasoline vehicles, 1,253 miles from diesel vehicles, and 10,774 miles from compressed natural gas vehicles. In addition, the backhoe/loader operated for a total of 193 hours. For the purpose of this analysis it was assumed that mileage reported in 2009 is consistent with what mileage would have been for 2005 and 2009 data were used to establish the baseline.[6]

Other City Vehicles
There are a number of other vehicles that are used daily or periodically by city staff and employees. Vehicle types range in make and model, but are generally represented by the category light truck/SUV/pickup. For the purpose of this analysis it is assumed that 75% of the miles traveled are from gasoline vehicles and 25% are diesel. Estimated mileage for Other City Vehicles totaled 119,220. Therefore, it is estimated that 89,415 miles are attributed to gasoline combustion and 29,805 to diesel.

[6] In addition, there are two street sweepers, and a John Deer backhoe/loader. Emissions from construction equipment are not included in the analysis since gasoline usage or mileage data is unavailable.

Employee Commute

To estimate the annual vehicle miles traveled from City employees traveling to and from work, it was assumed that the 100 employees took four trips per day (to and from work, to and from lunch), and traveled an average of 7 miles during 52 five-day workweeks in 2005. Therefore, an estimated 728,000 vehicle miles were traveled in 2005 from La Quinta employees commuting to and from the Civic Center. For analysis purposes it is assumed that 90 percent of vehicles use gasoline and 10 percent use diesel fuel.

Solid Waste

City Hall facilities including the Civic Center, Library, and Senior Center have waste disposal service pickup once or twice a week. All facilities have 3 and 4 cubic yard bins for trash and recyclables. While trash bin containers hold a specific volume, the weight of the trash varies depending on the density of the material. In order to approximate average weight, it was assumed that trash bins at City facilities contained a mix of paper products, food waste, plant debris, wood and textiles, and miscellaneous waste.

Since waste products vary drastically in weight it was assumed that, on average, one cubic yard of commercial trash weighs 0.075 tons (150 lbs.) and one cubic yard of recyclables weighs 0.2 tons (400 lbs.). The table below shows the estimated amount of waste produced at the following City facilities.

Table 14
Municipal Solid Waste 2005
(Pounds per Year)

	Trash	**Recycling**
Senior Center	46,800	62,400
Civic Center	23,400	62,400
Library	62,400	104,000
Fire Stations	23,400	0

Assumptions: One cubic yard of trash weighs 150 pounds and one cubic yard of recyclables weighs 400 pounds. On a weekly basis trash volumes average the following cubic yards: 6 at the Senior Center; 3 at the Civic Center; 8 at the Library; and 3 at the Fire Station. On a weekly basis recyclable volumes average the following cubic yards: 3 at the Senior Center; 3 at the Civic Center; 5 at the Library; and 0 at the Fire Station. Solid waste at the fire station was multiplied by three to account for all three fire stations within the City.

The above table is provided for comparison purposes only. The municipal CACP model does not specifically break out solid waste generated by government operations.

ii. Baseline CO2e

The following discussion provides a detailed breakout of the sources that generate greenhouse gas emissions from the operation of municipal facilities and services. In addition, municipal sectors are summarized to arrive at the government specific CO2e baseline for La Quinta Municipal Activities in 2005, which is estimated to be 10,240 metric tons.

Electricity

Electricity is used for the operation of municipal buildings and facilities, streetlights and traffic signals, and for the transport and distribution of water. Table 15 shows energy consumption from each source and the associated CO2e emissions.

Table 15
Municipal Baseline 2005 Electricity

Categories	**kWh**	**CO2e**
Water Delivery	14,122,310	6,167
Street lighting	1,311,439	573
Buildings		
Park and Recreation	496,710	217
Public Works	77,720	34
Police*	82,650	36
Silver Rock	1,149,110	939
Fire Station #93*	92,240	40
Fire Station #32*	57,040	25
Fire station #70*	65,280	29
Civic Center	1,146,400	501
Library*	509,120	222
Senior Center	207,200	90
Total	**19,317,219**	**8,873**

Source: CACP
***** Represents partial data or not fully operational in 2005, therefore 2009 figures are utilized.

Natural Gas

Table 16 shows the data provided by the Southern California Gas Company for La Quinta's municipal facilities and the associated CO2e emissions from said consumption.

Table 16
Municipal Baselines 2005 Natural Gas

Facility	Cubic Feet	CO2e
Civic Center	1,567,500	86
Library*	157,100	9
Senior Center*	639,400	35
Fire Station #93*	114,600	6
Total	**2,478,600**	**136**

Source: CACP
* Represents partial data or not fully operational in 2005, therefore 2009 figures are utilized.

Transportation

Table 17 summarizes vehicle miles and CO2e emissions from the fuel sources used for municipal activities, which include police vehicle fleet, general City Vehicles, Public Work Vehicles, and employee commutes.

Table 17
Municipal Baselines 2005 Transportation

Facility	Vehicle Miles	CO2e
Diesel	103,858	51
Gasoline	1,447,104	741
Compressed Natural Gas	10,774	6
Total	**1,561,736**	**798**

Source: CACP

Sector Summary

Table 18 shows the total metric tons of CO2e by sector for the 2005 baseline year for the La Quinta's Municipal operations. The chart which follows shows the percentage contribution for each municipal sector.

Table 18 Municipal 2005 Baseline by Sector (metric tons)	
	CO2e
Building and Facilities	2,268
Streetlights and Traffic Signals	573
Water Delivery	6,167
Vehicle Fleet	447
Employee Commute	352
Total	**9,807**
Source: CACP	

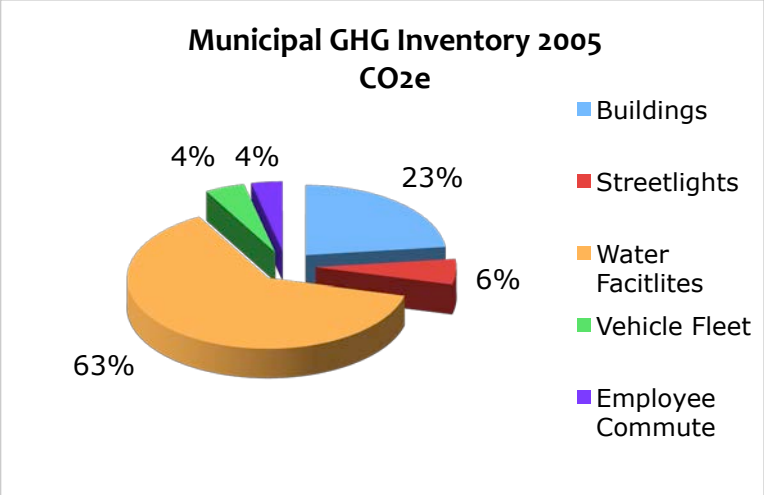


Chart 4: Municipal GHG Inventory

IV. LA QUINTA CO2E EMISSIONS FORECAST

A. General Trends and La Quinta Specifics

Demographics

The California Department of Finance (DOF), Coachella Valley Association of Governments (CVAG), and the Southern California Association of Governments (SCAG) provide city-specific growth rates and other demographic information that has been used in order to project future conditions within the City of La Quinta. Table 19 below shows the growth rates and demographic information that was utilized in the CACP model. Growth rate is the amortized rate from 2005-2035.

Table 19
La Quinta Growth Rates and Demographics

	Growth Rate	Year 2005	Year 2012	Year 2020	Year 2035
Population[1]	1.82	38,510	43,682	50,449	66,089
Households[2]	1.40	18,762	20,676	23,103	28,448
Employment[3]	0.81	11,400	11,465	11,539	11,678
Commercial sq.ft[4]	0.95	2 ,749,018	6,532,911	7,047,692	8,124,745

Source: 2005 figures are from Table 2: E-5 City County Population and Housing Estimates, DOF. 2035 figures are from the Draft Integrated Growth Forecasts, SCAG, May 2011, unless otherwise noted. Figures for 2012 and 2020 assume the average annual growth rate between 2005 and 2035.
1. Population and household figures are from DOF and SCAG for 2005 and 2035 respectively. Population projections for 2035 are weighted to include seasonal residents.
2. SCAG 2035 projections show occupied units, as such, values are weighted by 41.5% to include vacant dwelling units.
3. Employment data for 2005 is from Lori Lafond at LQ, and 2035 data is from the Riverside County Center for Demographic Research.
4. Commercial square footage for 2005 is from Wallace Nesbit, Principal Planner of LQ. Growth rate shown represented expected between 2010 and 2035.

The composition of the population is an important indicator of behavioral and social trends that may affect greenhouse gas emissions. The overall population of La Quinta grew by nearly 60% between 2000 to 2005, and is projected to rise by another 37%, to 52,990 full time residents by 2035. As the population rises, the median age of La Quinta residents continues to rise – the median age in 2000 was 36.4, and rose to

39.6 in 2009. La Quinta residents over the age of 55 made up approximately 27% of the population in 2009.[7] The aging population of La Quinta is representative of the Valley-wide trend. La Quinta serves as a retirement destination and offers second homes for many retiring baby boomers.

Energy and Smart Grid Systems

For the most part, the power grid system is outdated and is lacking new advances and state of the art technologies that would increase energy transport efficiency and production, and reduce associated GHG emissions. Approximately one-third, or 2,500 million of 6,022 million total metric tons of carbon dioxide produced in 2007 in the United was from electric production. Future consumption of electricity is projected to increase by 41% by 2030, and production from fossil fuel plants is expected to increase from 71% to 74% during the same period under a "business as usual" approach. Increased energy demands that are met under business as usual conditions result in increased emissions of carbon dioxide and other greenhouse gases.

The Energy Independence and Security Act in 2007 deviates from business as usual by calling for increased energy efficiency, reduced greenhouse gas emissions from electric generation, and energy independence. The Act calls for the modernization of the electric grid through the development of a Smart Grid System.[8]

A Smart Grid System incorporates the latest digital technology and provides real time management for electricity production and distribution. The Smart Grid moves away from the currently centralized, producer controlled network to a consumer and user based system. New technologies allow consumers to digitally monitor energy use and cost, and help them to make informed decisions about when to run appliances. Real time two-way communication systems move electricity between utilities and consumers using sensors that monitor electricity demand and supply data throughout the distribution and transmission system, and automate energy transmission accordingly. This allows utility companies to not only balance supply and demand and create more reliability, but also optimize the use of power plants, distribution substations and other infrastructure to create more efficiency. The Smart Grid Systems is better equipped to integrate renewable energy production such as wind, solar, and biomass, and use these sources during high peak loads. A Smart Grid is more resilient in that it is able to pinpointing where disruptions occur and where demand is needed.

The Smart Grid will provide more efficient and reliable sources of power, which will result in reductions to GHG emissions. Integrating renewable energy sources from wind, solar, and biomass-capture will reduce reliance upon fossil fuel generating

7 Riverside County 2009 Progress Report, 2010.

8 The Smart Grid: An Introduction, prepared for the US Department of Energy, 2008.

facilities and replace nonrenewable energy production with clean and renewable sources. The Smart Grid will better manage small scale electricity production, such as rooftop solar, and will be more capable of putting excess power back onto the grid. The efficiencies and new technologies that make up the Smart Grid System are expected to reduce greenhouse gas emissions.

The generation of electricity through the combustion of coal, petroleum, and natural gas accounts for 86.2 percent of the greenhouse gas emissions nationwide.[9] Reducing emissions from this sector will come from increased efficiency on the demand side and a shift towards cleaner energy production on the supply side.

There are several existing IID, state, and federal incentives to encourage energy savings on the demand side. These include rebates for replacing older appliances with updated energy efficient models, home and business retrofit and weatherization programs, and educational campaigns aimed at changing behaviors to achieve energy conservation. In addition, new technologies that offer real time monitoring for home and business use may be effective in realizing energy conservation and improving energy use efficiency.

Residents and businesses in the City of La Quinta can take advantage of having an average of 350 days of sunshine per year, and installing small-scale photovoltaic solar arrays on residences and buildings or above parking structures.

Due to recent policies and incentives, many of the utility providers are increasing the use of renewable energy sources to diversify the grid and reduce GHG emissions from the production of electricity. IID operates in a geographic region that supports the use of geothermal, solar, and wind power in energy production, and intends to expand the use of these resources in the next several years. Renewable energy projects currently under way or in planning phases will diversify IID's grid mix and reduce the average greenhouse gas emissions for electricity generation.

In addition to diversifying the grid, new comprehensive grid management technologies such as "smart grid systems" provide real time control over energy use and capacity, and have the ability to avoid unnecessary losses due to inefficient transport and leaks.

Energy Efficient Building Codes

California has strict building codes to help reduce energy consumption and greenhouse gas emissions. The California Building Standards Code Title 24 was created in 1978 to reduce California's energy consumption. Title 24 has established the Energy Efficiency Standards for Residential and Nonresidential Buildings, which requires new development to comply with mandated energy efficiency standards.

[9] Trends in Greenhouse Gas Emissions: Figure 2.5 2008 Energy Sector Greenhouse Gas Sources.

These standards are updated periodically to take advantage of new technology for reducing energy consumption. The 2008 Standards went into effect on January 1, 2010, and hold that all new projects requiring building permits conform to the 2008 Standard.

The 2008 Standards provide both mandatory measures and prescriptive requirements for new construction for both residential and nonresidential structures in California. For residential projects, the 2008 Standards provide new requirements related to the building envelope, HVAC units, water heating, and lighting. New residential homes, for example, are required to have 50% or more "high efficacy" light fixtures, rather than traditional incandescent light fixtures. High efficacy light fixtures include new technologies that use less energy, or wattage per lumen, than low efficacy lights. High efficacy lights include light emitting diode (LED) lights and compact fluorescent lighting. Other prescriptive measures include using double pane windows to reduce air leakage, installation of cool roofs, and new design techniques, such as the use of insulation around piping, to reduce heat loss associated with water heaters.[10]

For non-residential development, the 2008 Standards provide new requirements for the building envelope, mechanic systems, outdoor lighting, sign lighting and refrigerated warehouses. Outdoor lighting is required to be on sensors or have control switches that turn off when not used, and non-exempt outdoor lighting with lights over 100 watts are to be used with high efficacy lights of a least 60 lumens per watt or be controlled by motion sensor.[11] All new mandatory measures for both residential and non-residential units in the 2008 Standards are designed to reduce energy consumption and help reduce greenhouse gases.

Many new developments in La Quinta already incorporate energy saving techniques and measures that reduce energy consumption. The Trilogy at La Quinta project has incorporated energy reduction measures in new homes, including solar powered attic fans, dual-pane windows, Energy Star appliances, and solar electricity generation systems. The City's Vista Dunes Apartments was designed as a LEED Platinum project, incorporating roof-mounted solar, white roofs, Energy Star rated appliances and windows, and thermal chimneys to reduce costs for tenants. Future development in La Quinta will be required to continue using energy efficient systems and designs based on the latest building codes.

Vehicle Miles Traveled

Vehicle miles traveled (VMT) is a unit measurement that describes the distance traveled by vehicles. As the median age continues to rise in La Quinta, and new "active adult" communities are developed, new challenges exist for reducing

[10] "Residential Compliance Manual," prepared by California Energy Commission, December, 2008.

[11] "Nonresidential Compliance Manual," prepared by California Energy Commission, August, 2009.

greenhouse gases. The direct benefits of having an older population is that daily vehicle miles traveled is generally lower than for their younger cohorts, because retirees do not travel to work or transport children to different activities.

According to the 2001 National Household Travel Survey, Americans aged 55 to 64 on average drove 13,171 miles annually, and the over 65 population drove an average of 7,685 miles annually. The average daily miles traveled by persons 65 and older in 2001 was 27.5 miles, compared to 48.8 miles for those between the ages of 36 to 65. Population trends show, however that more people are reaching retirement age, and daily vehicle miles traveled by those older than 65 are increasing. According to the 2001 National Household Survey, average daily miles traveled by persons 65 and older were only 18.4 miles in 1990, compared to the 27.5 miles reported in 2001.[12] New opportunities exist when designing retirement communities to provide more walkable streets, mixed land uses, and golf cart access to reverse the trend of increasing vehicle miles traveled by the senior population.

For all segments of the population, land uses within a city have a tremendous impact on vehicle miles traveled. A study prepared for the U.S. Department of Transportation in April of 2006 analyzed the relationship between vehicle miles traveled and land use. It found that land use traits, including density, mix of uses, urban form, urban design, activity scale and contiguousness, influence vehicle miles traveled. The Study reports that trip rates increase when there is greater accessibility, including higher densities, mixed land uses, better connectivity of the transportation network, attractive urban design, and contiguous development. However, the length of each trip is shortened when development is built at higher densities with mixed land uses, and when there is greater connectivity within the transportation network.[13] Communities that incorporate mixed uses, such as residential built alongside commercial or office uses, enable residents to have localized access to jobs, shopping, and other activities. Conversely, single use development reduces connectivity and encourages longer trip lengths.

Greater accessibility also encourages alternative modes of transportation, such as walking, biking, golf carts (electric), or other means (not an automobile). Walking, for example, is related to distance, design, diversity, and density of a place. People are more willing to walk when a destination is in close proximity, the streets and buildings along the sidewalks are safe and attractive, activity levels along the streets

[12] 2001 National Household Travel Survey, prepared for US Department of Transportation & Federal Highway Administration, December 2004.

[13] "The Case for Moderate Growth in Vehicle Miles of Travel: A Critical Juncture in U.S. Travel Behavior Trends, prepared by Steven E. Polzin, Ph.D. Center for Urban Transportation Research, April 2006.

are high, and when there are multiple destinations.[14] Each of these factors helps to reduce vehicle miles traveled within a community.

Many communities are encouraging flexible zoning to allow for greater accessibility and to reduce greenhouse gases associated with vehicle miles traveled. La Quinta has the opportunity to reduce vehicle miles, and by extension greenhouse gas emissions, by establishing flexible zoning and improving connectivity. Walking and bicycling can be encouraged by providing sidewalks that are aesthetically pleasing, safe, have slower traffic on adjacent roadways, and interconnect with various destinations. The City can establish new golf cart routes, or expand the existing network of golf cart paths to expand the destinations for golf carts or electric vehicles, in an effort to reduce motorized vehicular travel. Future development in the City can also incorporate mixed land uses and activities to reduce trip lengths and travel. Each of these factors would not only help reduce vehicle miles traveled and lower greenhouse gases emissions, but would also help create a healthier, more livable community.

Solid Waste

Landfills are the second largest source of human induced methane emissions, and accounted for 23% of all methane emissions in 2007. Methane gas is created when bacteria decompose organic material, such as yard waste, paper, food waste, and other household waste. As bacteria break down organic material, they emit methane gas into the soil, which is then released into the air. Many landfills are utilizing gas recovery systems to capture methane releases. The EPA has established a Landfill Methane Outreach Program to encourage methane capturing at landfills around the country.[15] In California, the California Air Resources Board (CARB) approved the Landfill Methane Capture Strategy as an early action measure to reduce methane emissions from landfills. The Strategy calls for the following:

- Install new methane control systems at landfills that do not have them currently in place.
- Maximize landfill methane capture efficiencies by optimizing landfill design, operation, and closure/post-closure practices.
- Increase recovery of landfill gas for use as a biomass renewable energy source to replace energy from nonrenewable fossil fuel sources.[16]

La Quinta's solid waste is sent to Lamb Canyon Sanitary Landfill in Riverside County, but may be transported to one of several other landfills, including Badlands Sanitary

[14] The Transportation/Land Use Connection, American Planning Association, June, 2007.

[15] "Methane", http://www.epa.gov/methane/sources.html, prepared by US EPA, June 22, 2010.

[16] "Landfill Methane Capture Strategy", http://www.calrecycle.ca.gov/Climate/Landfills/default.htm, June 25, 2008.

Landfill in Riverside County, Bakersfield Metropolitan Sanitary Landfill in Kern County, Puente Hills Landfill in Los Angeles County, and Sycamore Sanitary Landfill in San Diego County. Not all of these landfills currently have methane control systems in place, but will be required to in the future, based on CARB regulations. Methane control systems will help reduce greenhouse gases associated with the decomposition at landfills. The most effective way to avoid GHG emissions from landfills, however, is to reduce the volume of solid waste through stream diversion and source reduction – more commonly referred to as recycling.

B. Community Wide Forecasts

Using baseline data and anticipated growth rates, greenhouse gas emissions can be projected for future years. Community wide emission forecasts for business as usual conditions project the level of emissions associated with each sector in the event that the status quo is maintained. The business a usual scenario serves as a benchmark from which emission reductions can be measured. The City of La Quinta has set a goal of achieving a 10 percent emission reduction from 2005 levels by 2020, and a 28 percent reduction from 2005 levels by 2035.

i. Business As Usual

Emission projections for business as usual conditions were forecast for 2012, 2020, and 2035 using the Clean Air and Climate Protection Software, Version 2.2.1b, April 2010. The Forecast Building function calculates future emissions based on annual growth rates and baseline input values. The detailed methodology on assumption and data sources utilized to construct the 2005 baseline inventory for the community wide analysis for the City of La Quinta are described above in Section III.A.i.

The Compound Annual Growth Rates for each sector were determined using the 2005 baseline data and the 2035 projections. The residential sector assumes an annual growth rate of 1.4 percent, consistent with the expected growth rate in households. The commercial sector assumes an annual growth rate of 0.95 percent consistent with the expected growth rate in the square footage of commercial lands, as set forth in the General Plan Update, relative to the 2010 commercial square footage estimates City-wide. The transportation and solid waste sectors assume an annual growth rate of 1.82 percent, consistent with the expected growth rate of the population. Community forecast projections use the annual growth rates for each sector, as described above, compounded from the 2005 baseline.

Table 20 Community Forecast by Sector (metric tons)			
	2012 CO2e	**2020 CO2e**	**2035 CO2e**
Residential	184,787	206,526	254,416
Commercial	184,380	198,908	229,306
Transportation	224,315	250,475	328,147
Waste	11,009	12,718	16,669
Total	**604,491**	**688,627**	**828,538**
Source: CACP			

ii. Reduction Targets

As mentioned above, the City has set a community wide goal of achieving a 10 percent reduction from 2005 levels by 2020, and a 28 percent reduction from 2005 levels by 2035. These targets are consistent with AB 32 and Executive Order S-3-05.

Table 21 Community Reduction Targets (metric tons)		
	2020 CO2e	**2035 CO2e**
Forecast (BAU)	668,627	828,538
Target	**414,852**	**331,881**
Source: CACP 2005 level 460,946 metric tons.		

C. Municipal Forecasts

Municipal forecasts establish a business as usual condition that serves as a benchmark from which emission reductions can be measured. As with the community-wide goal, the City has set a goal of achieving a 10 percent reduction from 2005 levels by 2020, and a 28 percent reduction from 2005 levels by 2035 for municipal government activities.

i. Business As Usual

Emission projections for business as usual conditions were forecast for 2012, 2020, and 2035 using the amortized growth rate for each sector. Assumptions for each sector were determined by arriving at the per capita usage rate for 2005. Forecasts for 2035 were then estimated by applying the assumption to the 2035 population. For buildings and facilities, it was assumed that the Library, Senior Center, and Police stations would expand relative to population growth, with a correlated increase in energy consumption between 2005 and 2035. Riverside County maintains a standard of 500 square feet of fire station space per 1,000 residents. Based on the current total square footage and future population, results in an annual growth rate of 1.574

percent. Other City buildings and facilities, including the Museum, Public Works Yard and the Civic Center are not expected to undergo further expansion through 2035. To forecast 2035 parks and recreation energy use, the 2005 per capita assumption of 12.9 kWh was applied to the 2035 population. The 2035 forecast for water delivery energy use was determined by the baseline per capita consumption, and was applied to the 2035 population. For growth in streetlights and traffic signals, it was assumed that only limited expansion would occur at an annual rate of 0.17 percent through 2035.

While similar methodology as that described above was utilized to forecast the municipal related transportation sector, assumptions were based on usage per employee, considering a relative employee per capita growth rate. For City vehicles, Public Works vehicles and employee commute trips, a growth rate of 0.26 percent was utilized. The police fleet was assumed to have an annual growth rate of 0.10 percent, based on the ratio of police vehicles per population in the 2005 baseline year.

Municipal forecast projections use a linear approach in estimating future year conditions, based on the annual growth rates for each sector, as described above, and the baseline indicator. The table below shows the forecast emission projections for each year analyzed.

Table 22
Municipal Forecasts by Sector
(metric tons)

	2012 CO2e	2020 CO2e	2035 CO2e
Building and Facilities	2,383	2,456	2,595
Streetlights and Traffic Signals	797	808	828
Water Delivery	6,705	7,322	8,484
Vehicle Fleet	431	419	429
Employee Commute	337	324	336
Total	**10,653**	**11,328**	**12,671**

Source: CACP

ii. Reduction Targets

As mentioned above, the City has set a community wide goal of achieving a 10 percent reduction from 2005 levels by 2020, and a 28 percent reduction from 2005 levels by 2035. These targets are consistent with AB 32 and Executive Order S-3-05. Although a formal target has not been set for 2012, La Quinta is committed to implementing early action measures and charting reduction progress. In order to encourage public participation and provide guidance through leadership, La Quinta holds the same target reduction percentages for municipal emission reductions as are targeted for community-wide emissions.

Table 23 Municipal Reduction Targets (metric tons)			
	2012 CO2e	**2020 CO2e**	**2035 CO2e**
Forecast (BAU)	10,653	11,328	12,671
Target		**8,826**	**7,061**
Source: CACP 2005 level 10,240			

V. GREENHOUSE GAS REDUCTION MEASURES

Greenhouse gas emissions can be reduced at their source, and at the end use by improving operating efficiency, increasing reliance on renewable sources for energy production, developing new technologies, and through conservation.

Emission reductions can be achieved through a broad and wide-ranging set of general and specific measures. Although general policies and programs tend to be more difficult to quantify, they may be equally as effective as some of the specific and quantifiable measures.

The following discussion includes both general and specific policies and programs that will result in the reduction of GHG emissions and move the City of La Quinta in the direction of achieving target reductions community-wide and for government-specific activities.

Greenhouse Gas reduction measures are divided into the following categories:

A. Community Implementation (CI) Measures that residents, businesses and institutions can implement. These are subdivided into measures specific to:

    i. Existing development; and
    ii. New development proposals for homes, businesses and institutions.

B. City Government (CG) Operational Measures that the City Government can implement.

It should be noted that community wide measures (CI) are those that the City will support, encourage and strive to achieve, whereas City Government (CG) Operational Measures are those that the City may choose to directly enact. Furthermore, it should be understood that measures listed below are suggested techniques to achieve GHG reductions, other City activities, policies and programs not mentioned here may be equally as effective at reducing GHG emissions. As such the following measures should be considered a guide, to initiate the effort.

This Plan provides the City with a menu of broad ranging programs which can be implemented in a variety of ways, including voluntary implementation, partnerships with utility and appliance companies, City incentive programs, and state and federal

incentive programs as they become available. The programs that can be quantified are included in the calculations in Sections V.A.iii., and V.B.ii below, which summarizes the potential emission reductions achieved when these measures are implemented.

A. Community Wide Measures

Greenhouse gas emissions in the City of La Quinta are generated by the day-to-day activities of residents, businesses, government activities, and utility services. To achieve reductions, the consumption of energy from electricity and natural gas must decrease, combustion of fuels for transportation must become more efficient, and disposal of solid waste to landfills must decline.

It should be noted that community wide measures are those that the City will support, encourage and strive to achieve. The measures listed below are suggested policies and techniques that are expected to have varying levels of success in achieving GHG reductions. Forthcoming policies and programs not mentioned here may be equally as effective at reducing GHG emissions. As such the following measures should be considered, refined, and evaluated to identify their level of success, and new measures developed to facilitate GHG reductions Citywide over time, as the City gauges the effectiveness of this Plan.

City Government is in a unique position to implement policies and programs that can have a community wide impact. Although City actions are somewhat limited in their ability to directly enforce the following measures, the City is committed to achieving GHG reductions Citywide and will support, encourage, facilitate and guide the community in this effort.

The policies and programs below will vary in their effectiveness in achieving greenhouse gas reductions. To reach targeted emission reductions for 2020 and 2035, the policies would have to achieve reductions equivalent to the quantified measures listed below.

<u>Energy Production Reductions</u>
Reduced emissions from the production and use of energy can occur by expanding the amount of renewable energy produced and used locally, and by increasing conservation and efficiency for end uses.

Renewable energy production can be in the form of large projects such as turbine fields and geothermal power generation, or small scale solar panels on individual rooftops. Both achieve greenhouse gas emission reductions through the generation of green electricity. Through Executive Order S-14-08, California has established a statewide renewable energy goal of 33% by 2020. Since IID has established renewable energy production as part of the existing grid mix, it was assumed in this document

that this initiative would result in an increase of 20% in renewable energy sources by 2020. Additional expansion of renewable energy production would further reduce greenhouse gas emissions from energy use.

Conservation Reductions

Energy conservation and improved energy use efficiency can be achieved through remodeling and retrofitting existing structures, upgrading existing electric and natural gas appliances, light fixtures, and windows, and through changes in behavior. New development can reduce energy demand, compared to traditional construction, through building design, orientation, and use of sustainable materials.

Transportation Reductions

Transportation is by far the largest emitter of greenhouse gases. Achieving reductions in this sector will come from improvements to fuel efficiency standards, land use efficiencies, and reducing overall vehicle miles traveled. Several approaches in reducing emissions from the transportation sector have been proposed, adopted and are under development at the State level.

- The Low Carbon Fuel Standard was developed pursuant to AB 32 and Executive Order S-01-07. The intent of the program is to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.
- The proposed amendment to the Low Emission Vehicle Program (LEV III) requires more stringent tailpipe and greenhouse gas emission standards for new passenger vehicles, and increases the number of plug in hybrids and zero-emission vehicles.
- The Clean Car Standard was developed pursuant to AB 1493 and is intended to reduce greenhouse gas emissions from vehicle miles traveled by 22 percent in 2012 and 30 percent in 2016.

At the national level, the Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) have developed regulations for heavy-duty and light-duty vehicle greenhouse gas emission standards.

- The heavy-duty fuel efficiency standard is intended to achieve a 20 percent reduction in greenhouse gas emissions for model year 2014 through 2018.
- The light duty regulations apply to model years 2012 through 2016 for passenger cars, light-duty trucks, and medium-duty passenger vehicles, and establish a fuel efficiency standard of 35.5 miles per gallon. Rulemaking is underway for model year vehicles 2017 and later.

The City of La Quinta is taking action through establishing specific goals, policies, and programs to reduce emissions from the transportation sector at the local level. Policies and programs are intended to reduce dependence on personal motor vehicles and encourage alternative modes of transportation, such as public transit, cycling, and walking. In addition, 'smart growth,' or policies that promote efficient

land use development, such as mixed use, can be effective in achieving greenhouse gas emissions from the transportation sector.

Waste Stream Diversion

Reducing the quantity of the waste stream and improving the energy recovery opportunities at landfills can achieve emission reductions from the solid waste sector. Waste stream diversion through recycling, composting, and donation programs are effective ways to reduce greenhouse gas emissions. Buying recycled products and products with minimal packaging, green building and demolition practices, and Desert Friendly Landscaping play can also be effective in reducing GHG emissions from the solid waste sector.

i. Community Implementation (CI) Existing Development

The following Community Implementation (CI) measures are those specific to existing development. As previously mentioned, existing development includes older buildings and operations that tend to be less efficient relative to new development. As such the existing development sector represents an opportunity for upgrades, retrofits, remodels, and refined operating procedures that could realize substantial reductions in GHG emissions.

Energy (Electric/Natural Gas)

CI-1. Encourage, promote, and facilitate rooftop solar. Work with IID and local solar providers to expand solar use Citywide.

a. Establish mechanism to keep track of homeowner participation and wattage produced.

i. Work with IID to offer rebate incentives.
ii. Inform residents and businesses of state and federal incentives such as the US Department of Energy's 30% tax credit for systems placed in service before December 31, 2016. The California Energy Commission's Emerging Renewables Program also provides rebates and funding to offset the cost of purchasing and installing renewable energy systems. The New Resource Bank offers Solar Home Equity Loans or Lines of Credit to finance solar projects.

b. Facilitate partnership between IID and large commercial centers to lease rooftop space and carports for installation of solar panels.

CI-2. Encourage energy efficient upgrades and retrofits of existing homes, apartments, condominiums, businesses, offices and other buildings.

a. Consider the following homeowner improvements:

i. Increase wall and roof insulation to a minimum of R-30.
ii. When replacing a traditional roof, use a green roofing system to reflect rather than absorb heat.
iii. When replacing a traditional flat roof, use a cool roofing system.
iv. Weather-strip all doors and windows.
v. Replace lighting fixtures with energy efficient fixtures and use high efficiency light bulbs for all lighting.
vi. Replace windows with high efficient R Value windows.
vii. Utilize solar control for south and east facing windows.
viii. Install solar panels on carports.
ix. Convert traditional landscaping and irrigation systems to drought tolerant landscaping and "smart" irrigation systems.

b. Encourage home expansions and substantial remodels to achieve Green Building Standards.

i. Verify that improvements achieve a minimum of 35% increase in energy efficiency relative to previous condition.

c. Provide existing residents and businesses with information on programs, incentives, rebates, and other opportunities to participate in the retrofitting effort.

i. Include information on maintenance in the Gem or other City publications to residents.
ii. Maintain list of Energy Service Companies (ESCO) that provide energy performance contracts.
iii. The California Energy Commission's Energy Efficiency Financing Program provides financing for schools, hospitals, and local governments through low-interest loans for feasibility studies and installation of energy saving measures.
http://www.epa.gov/greenbuilding/tools/funding.htm#guides

CI-3. Expand and promote community involvement with existing energy programs.

a. Coordinate with IID and local businesses to conduct 100 home audits annually.

b. Coordinate with utility providers and others to implement a Residential Energy Assistance Program (provide low cost energy efficiency improvements to qualifying households at no or low cost).

CI-4. Encourage and promote the use of energy efficient appliances and fixtures. Include information on maintenance in the Gem or other City publications to residents and businesses.

a. Offer incentives and rebates for the use of energy efficient appliances.

b. Strive to achieve 100,000 kWh savings from the Energy Star Rebate Program. Coordinate with IID to track progress within City limits.

c. Encourage proper maintenance and upkeep of appliances to assure maximum operating efficiency, such as the following:

i. Clean condenser coils on refrigeration units.
ii. Replace water heater and/or pool heater with energy efficient or solar water heating systems.
iii. Insulate hot water heaters.
iv. Automate heating and cooling systems, and encourage annual inspections of HVAC systems.

CI-5. Remove programs and policies that interfere with achieving CO2e reduction targets.

a. IID's Average Bill Payment Program may be a disincentive for energy savings. Consider adding incentive to participants who cut annual energy use or sign up for a flex program where AC is voluntarily shut off for 15 minutes during peek demand.

CI-6. Strive to achieve carbon neutral buildings for existing development.

a. Encourage retrofits, remodels or expansions to achieve net zero emissions.

b. Consider initiating a fund that can be used to purchase offsets when net zero cannot be achieved onsite.

Transportation

CI-7. Promote alternative modes of transportation, other than single occupancy automobiles.

a. Provide interconnected multi-purpose paths and routes that accommodate biking, pedestrians, and golf cart use.

b. Provide safe and convenient connectivity between and within commercial centers and institutions that are accessible to cyclists, pedestrians, and other alternative modes of transportation.

c. Provide safe and convenient bicycle and electric golf cart parking at commercial centers, office parks, and public facilities.

d. Encourage businesses to offer home delivery for goods and services.

e. Encourage Homeowners Associations to offer scheduled vanpools for shopping and free transit passes.

CI-8. Synchronize signals within the City of La Quinta and coordinate with adjacent jurisdictions when possible.

CI-9. Promote the sale of fuel-efficient vehicles, including electric and work to establish low carbon fueling station infrastructure.

a. Work with CVAG in developing a Valley-wide network of alternative fuel, such as CNG, and electric charging stations.

CI-10. Develop City standards for parking facilities to incorporate electric car charging stations.

a. Retrofit parking facilities to include public charging stations for golf carts and electric vehicles in conjunction with solar or renewable energy generation sources.

CI-11. Ensure proper maintenance of vehicles to achieve optimal performance and reduce emissions.

a. Encourage service providers to adhere to the Tire Inflation Program.

b. Enforce SCAQMD anti-idling regulations (5 minutes for heavy trucks) and encourage the school bus fleet to reduce idle time.

c. Minimize idling time for construction equipment.

CI-12. Work closely with SunLine Transit to expand and promote the use of public transit locally and provide support for Valley-wide and regional expansion of services.

a. Encourage businesses to offer free transit passes to employees.

CI-13. Encourage infill and mixed use development that site residents in close proximity to services and public transportation hubs.

Waste

CI-14. Reduce the waste stream.

a. Promote the use of compostable or recyclable plates, utensils, cups, and napkins at City businesses. Provide accessible and clearly labeled bins for compostables, recyclables, and disposables.

b. Work with Burrtec to implement tiered pricing for waste collection and offer various sized bins. Provide large standard size bins for recyclables and yard waste.

c. Promote grass-cycling where clippings are left on lawn. This both limits the need for fertilizers and improves moisture retention.

d. Encourage businesses to sell items that use minimal packaging.

e. Expand composting programs and opportunities for residents and businesses.

f. Encourage residents and businesses to convert to paperless invoicing and bill payment.

g. Encourage food retailers and restaurants to work with food banks and charitable organizations rather than disposing of expired or imperfect foodstuffs.

CI-15. Divert the waste stream.

a. Require that recycling bins and pick up services are available in all existing multi-family and non-residential buildings.

b. Require Burrtec to periodically check that bin labels are visible and accurate.

c. Require all construction projects to recycle or salvage at least 50% of construction waste.

d. Reuse construction waste in project features. For example, concrete can be crushed and used in walkways or parking lots.

e. Educate residents and businesses about composting, use of reusable bags, and reusable to go containers.

f. Offer home composting starter kits and training programs to residents.

g. Encourage restaurants to use recyclable or compostable to go containers.

h. Encourage restaurants to compost food waste.

i. Expand accessibility of recycle bins for commercial businesses and multifamily housing.

CI-16. Encourage donations of unwanted items to local non-profits.

a. Expand pickup days for collection of donations.

CI-17. Encourage local businesses that offer repair, refinish, and maintenance service for appliances and furniture.

CI-18. Encourage businesses and facilities to become low waste partners. Highlight programs and activities that reduce, reuse, recycle or avoid the generation of waste. For example a supermarket could highlight products that contain less packaging, or are packaged in recyclable containers. Schools can encourage children to bring lunches in reusable containers. Retailers can switch from disposable to reusable plates, cups, utensils, and napkins.

ii. New Development (ND) Implementation Community Wide Programs

The following implementation measures are those specific to New Development (ND). New development is required to adhere to latest building code standards, which assure energy efficiency and incorporate passive and active design features intended to benefit the overall operating efficiency of new buildings. New development should be encouraged to exceed these standards and rewarded for their effort. New development represents an opportunity to incorporate innovative

design features, and introduce new and emerging technologies to further realize efficiency and sustainability citywide.

Energy Efficiency Measures

ND-1. Encourage and promote that all new commercial and residential development achieve energy efficiency and incorporate sustainable design principles that exceed Green Building Code requirements.

a. Require projects that implement green building principles to report GHG reductions achieved.

i. Record number of building permit applications constructed that exceed Title 24. Include tabulation on estimated energy saved and associated GHG reduction achieved.

b. Encourage the use of energy efficient appliances and fixtures that are Energy Star rated or equivalent for all new buildings.

c. Require high efficiency water fixtures (toilets, water heaters and faucets) in all new buildings and remodels.

d. Limit turf to 10% of all landscaped areas, exception for active use areas.

ND-2. Work towards carbon neutrality for all new buildings. Carbon neutral buildings achieve a net zero emission of GHGs through design measures, onsite renewable, and offsets.

a. Strive to achieve carbon neutrality for a minimum of 525,000 square feet of new commercial development by 2020, and an additional 230,000 square feet for new development between 2020 and 2035.

b. Strive to achieve carbon neutrality for a minimum of 1,000 residential homes by 2020 and an additional 1,000 homes by 2035.

ND-3. Encourage all new development to meet 50% of energy demand through onsite solar or other non-polluting source.

a. Dedicate accessible rooftop space for solar and wire for photovoltaic energy.

i. Rooftop solar or above parking solar shall be preferred to the development of solar offsite. ‘

b. Require solar water heaters.

Transportation

ND-4. Encourage all new development to minimize vehicle trips.

a. Implement the Transportation Demand Management Ordinance.

b. Encourage business with >50 employees to offer bus passes or establish carpool programs for employees.

c. Consider proximity to services when permitting new residential development.

i. When considering mandated affordable housing projects, consider partnering with commercial developer to create a Mixed Use project.

ND-5. Require that new commercial development include provisions for bus stops and scheduled transit services from SunLine transit where available.

ND-6. Require that new development accommodate pedestrians and bicyclists.

a. Include facilities for safe and convenient bicycle parking for non-residential and multi-family development.

b. Consider access routes for pedestrians and bicycles.

Waste

ND-7. Encourage all new development to utilize materials that consist of recycled materials and are recyclable.

ND-8. Consider the provision for the requirement of onsite composting facilities.

ND-9. Encourage new commercial development to prepare an operational plan to minimize waste.

ND-10. Work with the County in developing a fee program for methane capture to fund the development of methane capture facilities at landfills utilized by the City.

ND-11. Encourage convenient, accessible, and easy disposal opportunities.

a. Require the proper labeling of bins to enhance participation.

b. Increase sorting before and after collection to minimize the waste stream.

c. Work with Burrtec to expand accepted recycled products.

iii. Quantifiable Reduction Measures

The above policies and programs will have various levels of success in achieving greenhouse gas reductions. Tables 24-27 below provide estimated GHG reductions for programs that are quantifiable. The implementation and quantification of programs that are not listed in Tables 24-27 will result in additional reductions. The failure to achieve implementation of the measures set forth below may result in the failure to meet the reduction targets the City has set. On-going monitoring programs described in Section VI will be required to assure that the City is on track to achieving targeted reduction in GHG emissions.

The quantifiable measures listed in the tables below are achievable in a variety of ways. Implementation programs and the general goals and policies that will support encourage and facilitate realization of the GHG Reduction Plan are listed above in Sections Ai and Aii. It is the responsibility of the City to take leadership that will stimulate community involvement and participation and set the precedent for making the City of La Quinta a sustainable community by achieving the targeted emission reductions set forth below.

Combining the measures set forth below will achieve a reduction of 253,950 metric tones of CO2e by 2020 and 496,681 metric tones of CO2e by 2035.

Table 24
Community Reduction Measures for the Residential Sector

Measure Number(s)	Sector	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CI-1	C	Increase Solar Existing Homes	Rooftop solar accounts for 50% of home energy demands for 3,500 homes by 2020 and rooftop solar accounts for 50% of home energy demands for 7,000 homes by 2035. In addition, 50% if BAU natural gas demand is met by solar.	16,656	26,624
CI-2 CI-3	A	Retrofit buildings	Building retrofits and insulation improvements yield 25% savings in BAU energy use. Applies to 3,500 homes by 2020 and 7,000 homes by 2035.	7,811	15,622
CI-3 CI-4	B	Upgrade Appliances	Upgrades to energy efficient models for home appliances yields a 35% savings in BAU energy use. Applies to 3,500 homes by 2020 and 7,000 homes by 2035.	10,935	21,870
ND-1	A	New Homes Efficiency	Homes built after 2012 are 30% more efficient compared to BAU. Approximately 2,990 new homes are anticipated through 2020 and an additional 4,950 from 2020 to 2035.	15,165	30,949
ND-2	A	Net Zero Home	By 2020 1,000 residential homes will be net zero users of energy. By 2035 2,000 residential homes will be net zero users of energy.	8,926	17,852
ND-3	C	New Homes Use Solar	New homes built between 2012 and 2020 meet 50% of energy demands from solar and require 35% less natural gas compared to BAU. New homes built between 2020 and 2035, approximately 4,950 new homes, meet 35% of energy demands from solar and require 35% less natural gas compared to BAU.	11,779	22,848
A= Energy Efficiency: Buildings; B= Energy Efficiency: Appliances and Equipment; C= Change in Energy Source.					

Table 25
Community Reduction Measures for the Commercial Sector

Measure Number(s)	Type	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CI-1 CI-2 CI-3 CI-4 CI-5 CI-6	B	Upgrade and Retrofit pre 2010 commercial buildings	Replace appliances with energy efficient models, install cool roofs, weatherizing features, and automate heating and cooling systems to achieve a 25% reduction in energy use for 20 percent of pre 2010 commercial square footage by 2020 and an additional 25% reduction by 2035. (Equates to ~130,500 square feet per year beginning in 2012).	9,046	20,727
CI-6	A	Net-Zero Retrofit Commercial	By 2020 20% of pre 2010 commercial development will be retrofitted to be net zero, and by 2035 25% will be retrofit to be net zero.	36,183	81,412
CI-1 ND-3	C	Expand Renewable Energy Grid	Utility provider draws 20% of grid mix from renewables by 2020. Accounts for reduction in energy from above measures.	18,426	569
ND-1	A	Net-Zero New Commercial	525,000 square feet of commercial development built between 2012 and 2020 will be net zero users of electricity. 230,000 square feet of new commercial buildings approved after 2020 will be net zero users of electricity.	14,817	21,308
A= Energy Efficiency: Buildings; B= Energy Efficiency: Equipment and Lighting; C= Change in Energy Source					

Table 26
Community Reduction Measures for the Transportation Sector

Measure Number(s)	Type	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CI-7 CI-13 ND-6	C	Alt Transport	5% of the 2020 miles generated by passenger cars (gas) and 2.5% of light duty trucks (diesel and gas) are avoided through increased walking and biking. By 2035 15% of BAU vehicle miles traveled by passenger cars and light trucks are avoided through increased walking and biking.	8,147	17,955
CI-8 CI-13 ND-4	D/G	Signal Synch & Mixed Use	Signal synchronization, mixed use and other and traffic flow improvements reduce vehicle miles traveled by 8.2% for passenger vehicles and by 7% for light trucks (gas and diesel), and heavy duty trucks, and CNG buses by 2020, and 10% for all vehicle types by 2035.	18,058	24,425
CI-9 CI-10	A	Electric Vehicles	By 2020 10% of gas and diesel passenger vehicles and light trucks will be replaced with electric vehicles, and 25% by 2035.	15,957	54,939
CI-12 ND-4 ND-5	B	Public Transport	3% of single occupancy vehicle miles traveled by gas passenger cars and light trucks (gas and diesel) will be replaced by public transit by 2020, and 7.5% by 2035. Accounts for increase in vmt's for CNG bus and an increase in fuel efficiency of 25% in 2020 and 40% by 2035.	5,115	9,169
CI-9 CI-10 CI-11	E/F	Increase Fuel Standard	Fuel efficiency is increased by 25% for heavy-duty trucks, 20% for light trucks (gas and diesel), and to 55 mpg for passenger vehicles by 2035. Assumed to be phased in beginning in 2013.[17]	49,245	21,106

A=Car/Van Pooling; B=Switch to Public Transport; C=Walking/Biking; D=Other VMT Reduction; E=Change in Fuel Type or Technology; F=Increase Fuel Efficiency; G=Land Use Related.

[17] Estimated reductions based on EPA Fuel Efficiency Standards, latest regulations require new fuel standards for 2012 models. Use of latest available technology including advanced diesel engines indicate that fuel standards will continue to increase over the next two decades.

Table 27
Community Reduction Measures for the Solid Waste Sector

Measure Number(s)	Measure Type	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CI-14 ND-9 ND-11	AL	Reduce Food Waste Stream	Reduce food waste stream by 68 tons by 2020 and by 652 tons by 2035.	19	334
CI-14 CI-18	AL	Reduce Paper Waste Stream	Reduce 10% of paper waste stream by 2020 and reduce 20% of 2020-2035 waste by 2035.	3,761	6,098
CI-14 CI-17 CI-18 ND-11	AL	Reduce Waste Stream	Reduce Misc waste by 185 tons through increased sorting by 2020 and by 2,810 tons by 2035.	584	9,470
CI-15 CI-16 ND-8	AL-DC	Compost Food Waste	Divert 25% of food waste stream by 2020 and by 2035 reduce 25% of the waste stream generated between 2020 and 2035. Food waste is composted rather than landfilled.	424	534
CI-15 ND-9	AL-DR	Increase Recycling of Paper Products	Divert paper waste stream to 5% by 2020 and divert 2020-2035 paper waste stream to 10% by 2035. Paper waste is recycled rather than landfilled.	2,485	4,029
CI-15 ND-9	AL-DC	Increase Composting	Divert plant debris waste stream to 50% by 2020 and to 25% by 2035. Plant debris is composted rather than landfilled.	410	474

W=Waste; AL=Avoided Landfill; DC=Disposal Compost; DR=Disposal Recycling

B. Municipal Government Measures

Greenhouse gas emissions are generated by the day-to-day operation of La Quinta's municipal facilities and public utilities, such as the conveyance and treatment of water, and traffic signals and street lighting. City owned and operated facilities include public buildings such as the Library and City Hall. To achieve GHG emission reductions, City facilities must reduce their energy consumption, expand use of renewable energy production, increase fuel efficiency of the City's vehicle fleet, and reduce miles traveled

i. Implementation Programs

The following City Government (CG) Implementation measures are those that the City can enact or influence. While the City has control over activities and operations at City Hall, the Senior Center, the Library and other government facilities, services such as water, sewer, waste disposal, energy and natural gas are under the jurisdiction of private and public agencies that operate independently of City Government. Nonetheless, the City is committed to taking a leadership role in establishing partnerships and collaborative programs to facilitate GHG reductions and increase operating efficiency in these sectors as well as city government operation. As such, the following CG measures include both direct actions the city can take as well as indirect methods to facilitate GHG reductions for municipal government operations.

The City can implement policies, programs and reduction measures immediately to achieve future year reduction targets and reduce CO_2e emissions in the short term (these measures are identified with the abbreviation CG below). Several early action measures are identified below.

CG-1. Retrofit and upgrade City buildings and facilities to reduce energy consumption and improve energy efficiency.

a. Install occupancy sensors within City Hall, the Senior Center, and Library to avoid the use of unnecessary lighting. (Early Action Measure)

b. Outfit city and public computers with Power Management Software to reduce energy demand. (Early Action Measure)

c. Upgrade HVAC systems to new energy efficient model and automate heating and cooling throughout the Civic Center. Replace air chilled systems with water-chilled systems.

d. Use only high efficiency light bulbs in all City buildings. (Early Action Measure)

e. Replace roofing at City facilities with cool or green roofs.

f. Reduce turf at City facilities by 50%, excludes active use parks. Active use area should be assessed to determine opportunity for a desert landscape demonstration garden. (Early Action Measure)

g. Install timers for all park play field lighting.

h. Plant trees to shade buildings, parking lots, and pavement. Initiate City tree inventory.

CG-2. Expand the mix of solar, geothermal, wind, and other green energy production.

a. Facilitate installation of solar panels on carports and buildings at City Hall, the Senior Center, and the Library.

b. Facilitate installation of a photovoltaic system for fire station 32. (Early Action Measure)

c. Facilitate installation of solar panels at SilverRock to produce 20% of on-site power needs.

d. Partner with IID to increase generation of renewable electricity.

e. Facility expansion or remodels shall generate 20% of electricity demand from onsite energy production.

f. Investigate the feasibility of offering loan programs to fund renewable energy production facilities.

CG-3. Minimize energy demand required for street lighting and traffic signals.

a. Replace streetlights with LED bulbs.

b. Remove and decommission unnecessary streetlights and traffic signals.

c. Dim street lighting as appropriate.

d. Retrofit or replace street lighting with models that use solar energy

CG-4. Reduce energy demand from pumping, transport, conveyance and treatment of water.

a. Minimize water use and increase water use efficiency for all City facilities and landscaping.

b. Encourage CVWD to expand the use of renewable energy to meet energy demand.

c. City facilities shall be equipped only with energy efficient pumps, low flow faucets, and Energy Star appliances.

CG-5. Reduce greenhouse gas emissions from City Government vehicle trips and minimize vehicle miles traveled.

a. Purchase hybrids or alternative fuel vehicles for City and Public Works fleet.

b. Implement an incentive program for City staff to carpool, use public transit, or alternative modes of transport.

c. Include "missing links" in trail, path and sidewalk system in Capital Improvement Program.

d. Synchronize signals within the City of La Quinta and coordinate with adjacent jurisdictions when possible.

e. Facilitate installation of a CNG refueling station at the Public Works yard, and implement public access for it.

f. Facilitate installation of charging stations at future public parking lots in the Village, at SilverRock, and on Highway 111.

CG-6. Include alternative transportation routes and programs that reduce vehicle miles traveled in the Gem on a regular basis.

CG-7. Minimize solid waste disposal at City facilities and events.

a. Provide convenient and clearly marked recycle bins alongside trash receptacles throughout City facilities.

b. Establish demonstration food composting program for Senior Center and City facilities that generate food waste.

c. Highlight low packaging options for consumers and offer informational pamphlets on products that minimize packaging.

d. Require composting of all landscaping waste generated at City facilities.

e. Maintain a two-sided copy policy at all City facilities.

ii. Quantifiable Reduction Measures

General goals and policies that will support encourage and facilitate realization of the GHG Reduction Plan are listed above in Section Bi above. Tables 28-32 below provide estimated GHG reductions for City Government programs that are quantifiable. The implementation and quantification of programs that are not listed in Tables 28-32 will result in additional reductions. The failure to achieve implementation of the measures set forth below may result in the failure to meet the reduction targets the City has set. That being said, refined measures or new initiatives not explicitly included herein may be equally effective at achieving GHG emission reductions. As such, the following quantifiable reduction measures should be considered general targets that may be implementable through a wide range of programs. On-going monitoring programs described in Section VI will be required to assure that the City is on track to achieving targeted reduction in GHG emissions.

Combined, the measured set forth below would achieve a reduction of 2,514 metric tons of CO2e by 2020 and 5,614 by 2035.

Table 28
Reduction Measures for the Buildings and Facilities

Number(s)	Type	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CG-1a	B	Install Occupancy Sensors	Installation of occupancy sensors throughout the Civic Center results in energy savings of 58,600 kWh by 2020 and a savings of 117,200 kWh by 2035.	26	77
CG-1b	B	PC Power Mng.	Power management for personal computers reduces energy use by 50%. Assumes that 6% of City Hall energy demand is due to the use of computers.	13	13
CG-1c	B	Upgrade HVAC	Upgrade and automation of HVAC system reduces energy demand by 8,800 kWh per year and 631,800 cubic feet of natural gas. Based on the difference between 2005 and 2009 energy demand.	38	38
CG-2a	C	Expand Renewable Energy	20% of 2020 energy demand for Community Center is met through onsite solar. By 2035 53% of energy demand is met through onsite solar (609,713 kWh). Accounts for reduction in energy from measures above.	91	266
CG-2a	C	Expand Renewable Energy	20% of 2020 energy demand is met through onsite solar, as is 40% of post 2020 energy demand by 2035. Senior Center Library	 21 53	 28 70
CG-2b	C	Increase Solar	Rooftop solar for Fire Station 32 generates 100,000 kWh per year by 2020 and 200,000 kWh per year by 2035.	44	88
CG-2c	C	Increase Solar	20% of 2020 energy demand (429,822 kWh) for Silver Rock is met through onsite solar, and 52% (1,124,414 kWh) by 2035.	188	491

A= Energy Efficiency: Buildings; B= Energy Efficiency: Appliances and Equipment; C= Change in Energy Source.

Table 29
Reduction Measures for Traffic Signals and Streetlights

Measure Number(s)	Type	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CG-3a CG-3b CG-3c	B	Minimize Hours of Operation	Streetlights and traffic signal hours of operation are minimized to achieve an 8% reduction in energy consumption by 2020 and a 25% reduction by 2035.	65	256
CG-3a CG-3b CG-3c	D	Remove Lights and Signals Use LED	By 2020 5% energy savings is achieved by removing unnecessary streetlight and traffic signals and by replacing streetlight bulbs with LEDs. By 2035 a 15% reduction in energy demand is achieved.	40	158
CG-3d	C	Use Green Electricity	Streetlights and traffic signals energy demand is met with green electricity for 5% by 2020 and 15% by 2035.	4	184

A= Energy Efficiency: Buildings; B= Energy Efficiency: Equipment and Lighting; C= Change in Energy Source; D= Reduce number of lights.

Table 30
Reduction Measures for Water Delivery and Transport

Measure Number(s)	Type	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CG-4a CG-4c	B	Increase Water Delivery and Transport	Upgrade and install energy efficient pumps, lifts, and other equipment to achieve a 5% reduction in energy use by 2020 and an additional 5% reduction by 2035.	366	772
CG-4b	C	Use Green Electricity	Utility provider uses green electricity to meet 20% of energy demand by 2020 and 32% by 2035. Accounts for reduction in energy demand from above measures.	1,391	2,728

A= Energy Efficiency: Buildings; B= Energy Efficiency: Equipment and Lighting; C= Change in Energy Source

Table 31
Reduction Measures for the Vehicle Fleet

Measure Number(s)	Measure Type	Measure Name	Assumptions	2020 CO_2e Reductions (tonnes)	2035 CO_2e Reductions (tonnes)
CG-5a CG-5e CG-5f	F	Increase Fuel Standard*	Fuel efficiency increases by 25% for light trucks and light duty vehicles by 2020, and by 2035 fuel efficiency increases by 40%.	35	52
CG-5a CG-5e CG-5f	F	Increase Fuel Standard*	Fuel efficiency increases to 35.5 mpg for police fleet vehicles by 2020. By 2035 fuel efficiency increases to 45 mpg for police fleet vehicles.	94	124
CG-5b CG-5c CG-5d	A/D	Reduce VMTs	Signal synchronization and traffic flow improvements reduce emissions from vehicle miles traveled by 5% by 2020, and by 10% by 2035.	21	64

A=Car/Van Pooling; B=Switch to Public Transport; C=Walking/Biking; D=Other VMT Reduction; E=Change in Fuel Type or Technology; F=Increase Fuel Efficiency; G=Land Use Related.

*Estimated reductions based on EPA Fuel Efficiency Standards, latest regulations require new fuel standards for 2012 models. Use of latest available technology including advanced diesel engines indicate that fuel standards will continue to increase over the next two decades.

Table 32
Reduction Measures for Employee Commute

Measure Number(s)	Type	Measure Name	Assumptions	2020 CO2e Reductions (tonnes)	2035 CO2e Reductions (tonnes)
CG-5a	F	Increase Fuel Standard	Fuel efficiency increases to 35.5 mpg for passenger vehicles by 2020. By 2035 fuel efficiency increases to 45 mpg for passenger vehicles.[18]	2	123
CG-5a CG-5f	E	Use Electric Vehicles	By 2020 10 employees use electric vehicles in place of gas or diesel passenger vehicles, and 25 employees replace traditional vehicles with electric vehicles by 2035 .	15	44
CG-5b CG-5c CG-6	B/ C	Public and Alt Modes of Transport	By 2020 five employees will use public transportation or an alternatives mode of transportation for their commute. By 2035 10 employees will do so.	7	13
CG-5a CG-5d	D	Reduce VMT and Signal Synch	Signal synchronization measure would reduce emissions from vehicle miles traveled by 5% by 2020, and by 10% by 2035.	1	26

A=Car/Van Pooling; B=Switch to Public Transport; C=Walking/Biking; D=Other VMT Reduction; E=Change in Fuel Type or Technology; F=Increase Fuel Efficiency; G=Land Use Related.

[18] Estimated reductions based on EPA Fuel Efficiency Standards, latest regulations require new fuel standards for 2012 models. Use of latest available technology including advanced diesel engines indicate that fuel standards will continue to increase over the next two decades.

VI. IMPLEMENTATION OF REDUCTION MEASURES

A. Introduction

The estimates for potential reductions in GHG emissions provided in Section V will require monitoring to assure that the City is meeting its targeted reductions. Furthermore, it is likely that over time, certain programs will be more successful than anticipated, and others less successful. Finally, the growth projections included in this document will also vary over time, and may require adjustment. The following details how the City will monitor implementation of the Plan, and establishes methods for amendments to the Plan, when they are found to be necessary.

The City will have the greatest control over the measures it can implement itself. In order to properly track reductions, and the success of implementation measures, the City must also track programs implemented in the community.

B. Implementation and Administration

Annual Activities

Monitoring of the City's greenhouse gas reductions will require annual reporting. The reporting activity, and the department responsible for it, are described below. All reporting is assumed to be on an annual basis, unless otherwise specified. All annual reports will be forwarded to the Planning Department.

Municipal Activities

1. Tabulate the number of new trees planted, and existing trees removed in City parks, parkways and other open space (Public Works Department).

2. Establish a liaison with School Districts to:

    a. Implement an "adopt a tree" program in schools for the planting and maintenance of trees on school grounds and in City parks. Tabulate number of trees planted as a result.

    b. Tabulate the use of CNG or other alternative fuel school buses used by the Districts. (City Manager's Office)

3. Establish and implement a quarterly Greenhouse Gas Reduction class for City residents and businesses (Community Services Department).

4. Tabulate the number of intersections at which traffic signals have been synchronized (City Engineer).

5. Tabulate the new trails, paths, bikeways and sidewalks constructed in linear miles (City Engineer).

6. Tabulate the number of gasoline and diesel vehicles removed, and the hybrid or electric vehicles added to the City's vehicle fleet (Finance Department).

7. Request reporting of carpool, vanpool and other Transportation Demand Management activities from all businesses subject to the Transportation Demand Management Ordinance in vehicle trips reduced (Planning Department).

8. Tabulate the carpooling, vanpooling and other activities of City employee programs in vehicle trips reduced (Planning Department).

9. Tabulate the new Energy Star rated appliances, and CFL or LED light bulbs installed at City facilities (Building Department).

10. Tabulate water use at City facilities (Finance Department).

11. Tabulate electric usage at City facilities (Finance Department).

12. Tabulate natural gas usage at City facilities (Finance Department).

13. Tabulate propane usage (if any) for City equipment or facilities (Finance Department).

14. Appoint a staff position to serve as the Sustainability Coordinator for the City.

<u>Community Activities</u>

1. Tabulate the number of new residential units by type (single family, multi-family), and the square footage of commercial and industrial development constructed (Building Department).

2. Tabulate the number of Energy Star appliances, high efficiency water heaters, pool pumps and pool heaters installed in new residential units (Building Department).

3. Tabulate all alternative energy installations on residential, commercial or other buildings (new or additions) (Building Department).

4. Establish a liaison with IID and the Gas Company to:

    a. Collect data on Energy Star appliances, high efficiency pool pumps and other appliances and fixtures replaced in La Quinta under a rebate or other incentive program.
    (Planning Department)

5. Tabulate any and all Energy Star appliances installed through any City-operated rebate program (City Manager's Office).

6. Establish a liaison with the Department of Motor Vehicles to collect data on the number of hybrid or alternative fuel vehicles registered in City. (Planning Department)

7. Establish a liaison with City home improvement stores (Home Depot, Lowe's, True Value and others) to collect data on the number of Energy Star or high efficiency appliances, water heaters, pool pumps and heaters, or solar heating systems purchased by residents and businesses. (Planning Department)

8. Track buildings constructed which exceed Title 24 Building Code standards by percentage exceeded (Building Department).

9. Track buildings constructed to LEED, by certification level (Building and Planning Departments).

10. Track homes constructed to Green Building standards (Planning Department).

11. Track solid waste and recycling tonnage generated by City residents and businesses (Planning Department).

12. Track the use of B20 or other biodiesel fuel in construction equipment (City Engineer, Planning Department).

The annual reports prepared by the City's departments will be the basis for the City's GHG Reduction Database. This database will cumulatively record the annual reports.

This database must also include an annual reporting of new units constructed and City population (Department of Finance annual report). The database will calculate the actual growth in the City, to be used to compare to the growth assumptions used in this document. As less growth will result in lower greenhouse gas emissions, population growth is an important component of the implementation program.

Activities Conducted Every Three Years

Every three years, starting in 2013, the City will run its Greenhouse Gas Reduction Measures through the computer program used in the preparation of this document, to determine if its targets are being reached. After each run of the program, City staff will determine which measures, if any must be modified to reach the City's reduction targets.

The analysis for each update must be conducted based on known actual activities, and known actual growth rates to be effective. This document assumes a steady annual rate of growth, for example, over the life of the program. In the last three years, however, growth in City has been significantly less than anticipated, due to economic and market conditions. A lower growth rate will be reflected in greenhouse gas emissions which are less than those anticipated in the model. Conversely, should the City experience an economic boom in the future, that increased growth should be reflected in the update undertaken at that time. By establishing and maintaining an annual reporting program, the City can be assured that the data required to conduct the update is available at the time it is needed, and in one database (as described above).

Modification of the Plan

If the analysis during any given update cycle shows that the reduction measures must be amended to achieve the stated targets, such an amendment shall be completed by staff during the same year as the update was undertaken. The amended reduction measure assumptions shall be appended to this document, and disseminated to City staff for implementation. If the amended measures prepared to achieve the reduction targets result in an increase of less than 20% in activity (percentage increase over the reduction measure in this document), the change shall not require adoption by the City Council. If, however, a reduction strategy requires an increase of 21% or more in a reduction strategy, the amended Plan shall be considered by the City Council, and adopted by Resolution.

Reaching the Reduction Target

If the periodic analysis indicates that reduction measures fall short of their intended targets, then corrective actions will be taken and more rigorous programs implemented. Should the City determine that targets are infeasible or would result in compromised economic vitality, then City staff may choose to amend reduction target downwards to levels that are deemed achievable.


La Quinta
GEM of the DESERT

APPENDIX A

La Quinta General Plan

Greenhouse Gas Reduction Plan

Understanding Climate Change

Background and Historical Trends

Prepared by

Terra Nova Planning & Research, Inc.®
42635 Melanie Place, Suite #101
Palm Desert, CA 92211

May 31, 2012

A. Understanding Climate Change

Weather can be defined as the current atmospheric conditions at a particular place and time, and includes variations in daily temperatures, precipitation and air circulation over a localized or regional area. A region can experience changes to the weather on a daily, or even hourly basis. Climate, on the other hand, is often defined as the long-term average weather for a region. Climate is a complex interactive system affected by both internal dynamics and external factors. External factors include variations in solar radiation, volcanic eruptions and other natural occurrences, and human induced changes to the atmosphere, including increased greenhouse gas production. Approximately 30% of solar radiation is reflected back into space. However the balance is absorbed into the Earth's atmosphere, and then into the Earth itself. Volcanic activity emits aerosols high into the atmosphere that help to reflect solar radiation back into space. Such reflection can cause mean global surface temperatures to drop over months and years. Other natural factors that affect climate are the presence of greenhouse gases in the atmosphere, such as carbon dioxide, methane, nitrous oxide and water vapor.

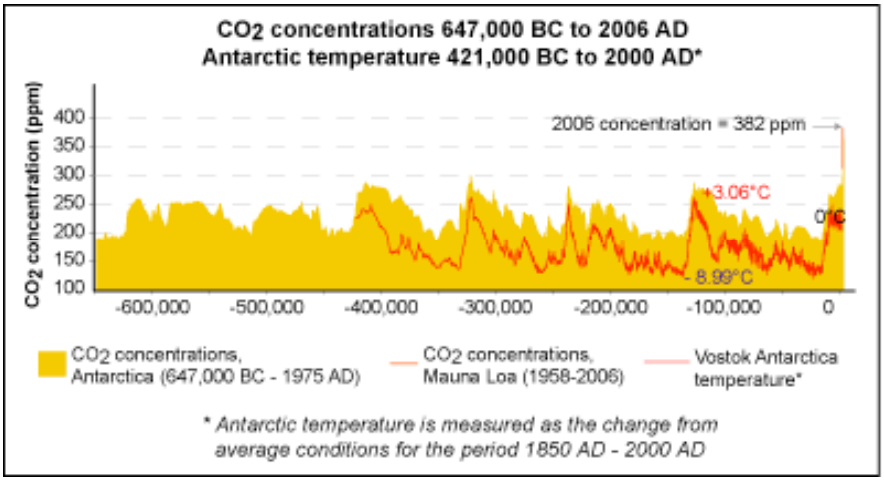
While natural processes have resulted in cyclical variations to Earth's temperatures over geological time, research indicates that man-made sources of GHG released since the beginning of the industrial era represent an unprecedented increase compared to historical levels. Carbon dioxide concentrations in the atmosphere have increased 35% over natural amounts, primarily due to combustion of fossil fuels. Human activities have altered the chemical composition of the global atmosphere and are believed to be responsible for climate change.[1]

Historical Trends

In order to understand modern effects of global warming, one needs to understand the historical trends of greenhouse gases in the atmosphere before and after industrialization. Recent ice core sampling has found that global concentrations of carbon dioxide, methane and nitrous oxide, which are considered long-lived greenhouse gases due to their chemical stability and persistence in the atmosphere, have increased significantly since the pre-industrial era. This increase has been associated with modern industrial activities, including the burning of fossil fuels, transportation, modern agriculture and industrial related activities.

[1] Climate Change 2007: Working Group I: The Physical Science Basis, prepared for Intergovernmental Panel on Climate Change, 2007.

Carbon dioxide is considered the most prominent greenhouse gas. Annual emissions of carbon dioxide grew by 80% between 1970 and 2004, and accounted for 77% of the total greenhouse gases emitted in 2004.[2] As shown on the graph below, carbon dioxide levels have increased from about 280 parts per million (ppm) before the industrial era, to 382 ppm in 2006. Prior to industrialization, carbon dioxide levels fluctuated between 180 ppm and 300 ppm. Between the years 1995 and 2005 alone, CO_2 levels have increased 1.9 ppm per year.[3] This represents a CO_2 concentration peak that has never occurred over the past 650,000 years.[4] The primary sources of this increased release of carbon dioxide has been associated to fossil fuel use and land conversion resulting in deforestation.



Source: US Environmental Protection Agency, 2010

Chart 1: Historic Fluctuation of CO2

Nitrous oxide concentrations have also increased since the pre-industrial era, however not to the same extent as carbon dioxide or methane. Nitrous oxide concentrations have increased from 270 parts per billion (ppb) before industrialization, to 319 ppb in 2005. Nitrous oxide emissions are generated by agricultural activities and combustion of fossil fuels. When measured on a global basis, however, 60% of nitrous oxide emissions are generated from natural resources. Nitrous oxide levels have increased approximately 0.25% per year during the last two decades.[5]

---

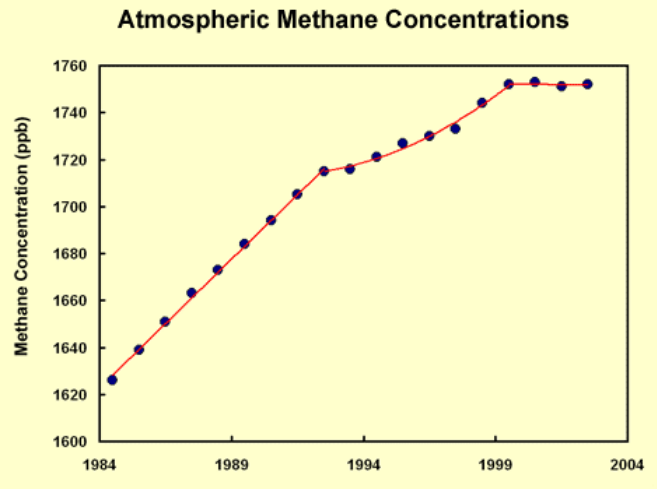
2 Climate Change 2007 Synthesis Report, prepared by Intergovernmental Panel on Climate Change, 2007.

3 Climate Change 2007: Working Group I: The Physical Science Basis, prepared by Intergovernmental Panel on Climate Change, 2007.

4 United States Environmental Protection Agency, 2010.

5 United States EPA, www.epa.gov/nitrousoxide/scientific.html, 2010.

Methane concentrations in the atmosphere have also increased substantially since pre-industrial times. Prior to industrialization, methane concentrations fluctuated between 320 ppb to 790 ppb, as determined from ice core samplings. Methane concentrations in the atmosphere have increased almost 150%, from a value of 715 ppb before industrialization, to 1774 ppb in 2005. The following chart shows the substantial increase in methane concentrations that have occurred over the past 25 years.



Source: US Environmental Protection Agency, 2010

Chart 2: Recent Methane Trend

Observed Changes in Climate

Scientists have been able to study climate change going back millions of years by studying ice cores, tree rings, glacier lengths, pollen remains, ocean sediment and changes in the Earth's orbit.

Prior to the industrial revolution, climate change was due to natural forces, including changes in the Earth's orbit, sun intensity, volcanic eruptions, changes in natural greenhouse gas concentrations, and changes in ocean currents. Since the beginning of the industrial era in 1750, human activities have contributed to climate change.

According to the Intergovernmental Panel on Climate Change (IPCC), global mean temperatures have risen 0.74°C degrees Celsius between 1906 and 2005; global sea surface temperatures have increased to depths of 3,000 meters since 1961; sea levels have risen by 0.17 mm since the beginning of the 20th century; and snow and glaciers continue to melt faster than new snow accumulation, contributing to rising sea

levels. Significantly, eleven of the twelve years between 1995 and 2006 ranked among the warmest years since records began in 1850.[6]

According to the National Oceanic and Atmospheric Administration (NOAA) and NASA reports, the average surface temperature of the Earth has warmed 1°F since the 1970's, and the Earth's surface is warming at a rate of 0.29°F degrees Fahrenheit per decade. NOAA observations have shown that temperatures in the United States have risen at an average rate of 0.11°F degrees Fahrenheit per decade over the last century. The IPCC has concluded that most of the global warming since the mid-20th century is not due to natural causes, but is a result of a rapid increase of greenhouse gases caused by human activities.[7] Since the 1980's, federal, State, and local governments have become increasingly involved in addressing climate change by calling for a reduction to greenhouse gas emissions to limit the potential effects of global warming.

B. The Impact of Climate Change

Global warming results in increased global temperatures, melting snow and glaciers, and rising sea levels. There are many indirect effects as well, including changes to agriculture and food supply, and human health effects. This section looks at some of the potential impacts of climate change.

Climate and Hydrology

One of the more direct effects of global warming is changes to the hydrologic cycle. Over the last hundred years, the Earth's mean temperature rose by 0.74°C degrees Celsius, with the northern hemisphere experiencing a more dramatic increase in temperature than the southern hemisphere. This rise in temperature has caused glaciers to melt, mountain snows to recede and ice caps to shrink. As shown in the satellite photos below, annual average Artic sea ice has decreased by 2.7% per decade. Additionally, the percentage of seasonally frozen ground in the northern hemisphere has decreased by 7% since 1900.[8] Ocean waters near Antarctica have risen and continue to result in loss of ice shelves around that continent.

Global warming affects precipitation and shifts rainfall patterns. Throughout the 20th century and the beginning of this one, records show that areas in the eastern parts of North and South America, northern Europe and Central Asia have received significant increases in precipitation. At the same time, areas along the Mediterranean, the Sahel region of Africa, southern Africa, and parts of southern Asia have seen declines

6 Climate Change 2007: Working Group I: The Physical Science Basis, prepared by IPCC Change, 2007.

7 US EPA, http://epa.gov/climatechange/science/recenttc.html, accessed November 2010.

8 Climate Change 2007 Synthesis Report, prepared by Intergovernmental Panel on Climate Change, 2007.

in precipitation leading to more droughts. Tropical cyclones have increased in intensity, especially within the North Atlantic, since the 1970's.[9]

The northern latitudes will most likely continue to see the greatest amount of warming, leading to reduced sea ice coverage in the Artic. Precipitation will continue to increase in high latitude regions and decrease in subtropical regions. Tropical cyclone intensities are projected to increase and storm tracks are likely to shift toward the poles. Increased sea surface temperatures will continue to melt polar ice caps, resulting in rising sea levels and coastal flooding.

Effects on Human Society

Climate change will result in human health effects. During the previous hot periods in the 1930's, less than 20% of the lower 48 States had above normal low temperatures during the summer. Within the last decade, however, approximately 30% of the lower 48 exhibit above normal low temperatures during the summer.[10] Higher low temperatures during the summer help inevitably lead to increased daytime temperatures, and can cause heat related injuries. The warming caused by greenhouse gases is likely to increase the occurrence and intensity of heat waves. Heat waves can result in heat stroke and heat exhaustion. These heat-related illnesses are likely to occur more frequently due to global warming, especially in urban areas. Indicators have shown that the percentage of the United States experiencing heat waves has risen since the 1970's.

Climate change is also affecting the growing season, crops and farming. The growing season in the US is between the last spring frost and first autumn frost. Since the beginning of the 20th century, the growing season has been extended by two weeks, with the biggest increase occurring just within the last 30 years.

Global warming has shifted animal and plant species' ranges, some of which are pests that threaten farming areas, especially in the northern climates.[11]

California Specific Effects

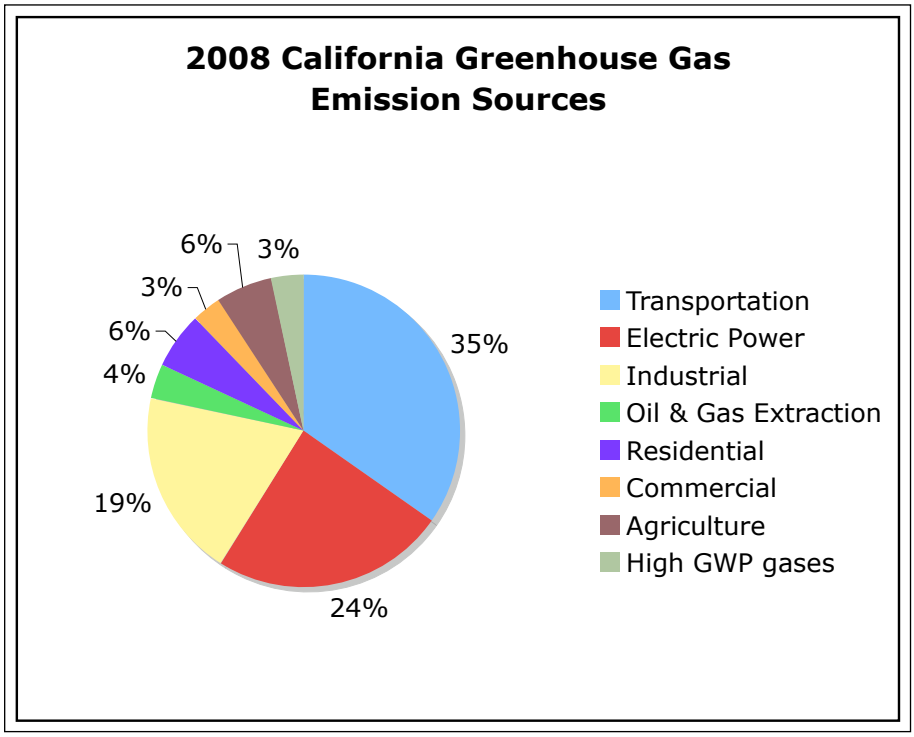
The State emitted approximately 477.7 million metric tons of CO2e in 2008, which was down from a high of 483.9 million metric tons in 2004. Transportation (cars, trucks airplanes and boats) was responsible for over 35% of the total greenhouse gases that were emitted in 2008, with 93% of transportation greenhouses gases coming from passenger vehicles and heavy-duty trucks.

9 Climate Change 2007 Synthesis Report, prepared by Intergovernmental Panel on Climate Change, 2007.

10 Climate Change Indicators in the United States, prepared by US EPA, April, 2010.

11 Climate Change Indicators in the United States, prepared by US EPA, April, 2010.

Electric power generation was the second largest source of greenhouse gas emissions in 2008, and generated approximately 116.4 million metric tons of CO2e, or 24% of greenhouse emissions.[12] The chart below illustrates the distribution of California's greenhouse gas emission sources.



Source: Trends in California Greenhouse Gas Emissions for 2000 to 2008, CARB, May 28, 2010
Note: High Global Warming Potential Gases (GWP) are ozone-depleting substances such as HFCs and PFCs, and are generated by such processes as semiconductor manufacturing and electricity grid equipment.

Chart 3: 2008 GHG Emissions Statewide

The early effects of global warming are evident statewide. The Sierra Nevada snowpack has shrunk by 10%, and a sea level rise of up to 8 inches has been recorded at the Golden Gate Bridge within the last 100 years. These climate change effects not only threaten to reduce California's future water supply and threaten low-lying coastal areas with flooding, but the California Legislature has also found global warming could affect state industries including agriculture, winemaking, tourism, skiing, commercial and recreational fishing, forestry, and electric power generation.[13]

[12] Trends in California Greenhouse Gas Emissions for 2000 to 2008, CARB, May 28, 2010.

[13] Climate Change Scoping Plan, prepared by CARB, December 2008.

C. Laws and Regulations

The International Panel on Climate Change (IPCC) was created in 1988 by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) to study the global effects of climate change. Studies prepared by the IPCC allow government leaders and policy makers to create regulation to address climate change. The IPCC played a major role in developing the United Nations Convention on Climate Change (UNCCC) treaty.[14] The UNCCC was adopted in 1992 to encourage countries around the world to join together and address the challenges created by climate change. The Convention is made up of 194 member countries, including the United States, who recognize the shared responsibilities for reducing greenhouse gases caused by industrialization. Under the Convention, governments gather and share information on greenhouse gases, national policies, and best practices; and create strategies for addressing greenhouse gas emissions. In December 1997, the UNCCC adopted the Kyoto Protocol to provide legally binding measures to reduce greenhouse gases by 5% from 1990 levels over five years, starting in 2008. The Kyoto Protocol was ratified by 192 countries. The United States signed the Kyoto Protocol but did not ratify it, and therefore is not required to abide by the reduction measures.[15]

In the United States, a national effort is underway to reduce greenhouse gases and has invested in clean energy technology. The American Recovery and Reinvestment Act of 2009 included $80 billion toward investments in renewable energy sources. The Administration has also established more stringent energy efficiency standards for commercial and residential appliances. Additionally, President Obama signed the Executive Order on Federal Sustainability, which commits the Federal Government to reducing greenhouse gas emissions by 28% by 2020, increasing energy efficiency, and reducing fleet petroleum consumption.[16]

California Laws

One of the first pieces of legislation passed to promote energy efficiency was the California Code of Regulations Title 24, enacted in 1978. Title 24 establishes energy efficiency standards for residential and nonresidential building construction. Over the years, the standards were periodically updated, with the most recent update becoming effective January 1, 2010.

---

14 IPCC, http://www.ipcc.ch/organization/organization_history.shtml, accessed November 11, 2010.

15 United Nations Framework Convention on Climate Change, http://unfccc.int/essential_background/items/2877.php, accessed November 10, 2010.

16 Energy & Environment, http://www.whitehouse.gov/issues/energy-and-environment, accessed November 10, 2010.

California's first climate change bill occurred in 1988, with the passage of Assembly Bill (AB) 4420. AB 4420 made the California Energy Commission responsible for studying greenhouse gases and preparing and maintaining an inventory of greenhouse gas sources.

In September 2000, Senate Bill (SB) 1771 created the non-profit organization, California Climate Action Registry, to help greenhouse gas emitters establish baselines and voluntarily record their greenhouse gas emissions in anticipation of credit programs for early reductions.

In 2002, AB 1493 was signed into law, requiring the California Air Resources Board (CARB) to set regulations on greenhouse gas emissions from passenger vehicles, non-commercial trucks and light-duty trucks sold in California. These new regulations were to become effective starting with 2009 models, however legal pressure from automakers and the US EPA delayed the process. The US EPA finally granted California the right to implement greenhouse gas emission standards on June 30, 2009, and it is expected that greenhouse gas emissions from non-commercial vehicles will be reduced by 22% in 2012 and 30% by 2016.[17]

In 2005, Executive Order S-3-05 went into effect, which calls for a State-wide reduction in greenhouse gas emissions to 2000 levels by 2010, 1990 levels by 2020 and 80% below 1990 levels by 2050. In 2006, SB 1368 passed to help transition power sources away from carbon-intensive plants toward cleaner energy producers. The most comprehensive piece of legislation to address climate change, however, is AB 32, or the Global Warming Solutions Act.

The Global Warming Solutions Act was passed by the State Legislature and signed by the Governor in 2006, and sets the target of achieving 1990 level emissions by 2020. The California Legislature passed AB 32 based on the following findings and declaration.

> *"The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to the marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other health-related problems."*[18]

[17] Clean Car Standards, Pavley, Assembly Bill 1493, http://www.arb.ca.gov/cc/ccms/ccms.htm, accessed November 11, 2010.

[18] Climate Change Scoping Plan, prepared by CARB, December 2008.

AB 32 gave the California Air Resources Board responsibility to develop early actions measures to reduce greenhouse gases.

The regulations imposed by AB 32 radically change the way business is done in California. Without AB 32, and under a "business as usual" approach, California was projected to release approximately 596 million metric tons of CO2e in 2020. AB 32 now requires a reduction of 169 million metric tons of CO2e, or a 30% reduction of greenhouse gases by 2020 to meet the established target of 427 million metric tons of CO2e.[19]

[19] Climate Change Scoping Plan, prepared by CARB, December 2008.

APPENDIX B

La Quinta General Plan

Greenhouse Gas Reduction Plan

Output Tables
Community Wide Analysis

Clean Air Climate Protection 2009 Software
Version 2.2.1b

Prepared by

Terra Nova Planning & Research, Inc.®
42635 Melanie Place, Suite #101
Palm Desert, CA 92211

May 31, 2012

La Quinta

Community Greenhouse Gas Emissions in 2005

Summary Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Residential	166,986	1,773	7,127	167,686	36.4	480,540,970
Commercial	77,157	881	2,918	77,492	16.8	203,221,151
Transportation	201,934	12,643	10,124	206,066	44.7	830,551,612
Waste	0	0	462,052	9,703	2.1	
Total	446,077	15,298	482,221	460,946	100.0	1,514,313,732

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Community Greenhouse Gas Emissions in 2005
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Residential						
La Quinta, California						
Untitled						
Electricity	137,011	1,716	4,289	137,633	29.9	315,169,183
Natural Gas	29,803	56	2,808	29,879	6.5	164,571,565
Propane	172	2	30	173	0.0	800,222
Subtotal Untitled	166,986	1,773	7,127	167,686	36.4	480,540,970
Subtotal Residential	166,986	1,773	7,127	167,686	36.4	480,540,970
Commercial						
La Quinta, California						
Untitled						
Electricity	69,169	866	2,165	69,483	15.1	159,111,567
Natural Gas	7,988	15	753	8,008	1.7	44,109,584
Subtotal Untitled	77,157	881	2,918	77,492	16.8	203,221,151
Subtotal Commercial	77,157	881	2,918	77,492	16.8	203,221,151
Transportation						
La Quinta, California						
Untitled						
Diesel	32,677	96	99	32,709	7.1	130,886,519
Gasoline	169,257	12,547	10,025	173,357	37.6	699,665,092
Subtotal Untitled	201,934	12,643	10,124	206,066	44.7	830,551,612
Subtotal Transportation	201,934	12,643	10,124	206,066	44.7	830,551,612

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Community Greenhouse Gas Emissions in 2005
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Waste						
La Quinta, California						
Refuse/Residue						*Disposal Method - Managed Landfill*
Paper Products	0	0	353,293	7,419	1.6	
Food Waste	0	0	68,413	1,437	0.3	
Plant Debris	0	0	29,821	626	0.1	
Wood or Textiles	0	0	10,525	221	0.0	
Subtotal Refuse/Residue	0	0	462,052	9,703	2.1	
Subtotal Waste	0	0	462,052	9,703	2.1	
Total	446,077	15,298	482,221	460,946	100.0	1,514,313,732

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions in 2020

Summary Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Residential	205,723	2,008	8,604	206,526	30.9	591,970,065
Commercial	198,111	2,078	7,299	198,908	29.7	521,383,620
Transportation	245,753	14,402	12,250	250,475	37.5	1,010,399,117
Waste	0	0	605,602	12,718	1.9	
Total	649,587	18,488	633,755	668,627	100.0	2,123,752,802

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Community Greenhouse Gas Emissions in 2020
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Residential						
La Quinta, California						
Untitled						
Electricity	168,798	1,937	5,107	169,505	25.4	388,251,436
Natural Gas	36,713	69	3,460	36,807	5.5	202,732,849
Propane	212	2	37	214	0.0	985,780
Subtotal Untitled	205,723	2,008	8,604	206,526	30.9	591,970,065
Subtotal Residential	205,723	2,008	8,604	206,526	30.9	591,970,065
Commercial						
La Quinta, California						
Untitled						
Electricity	177,717	2,040	5,377	178,462	26.7	408,766,144
Natural Gas	20,394	38	1,922	20,446	3.1	112,617,476
Subtotal Untitled	198,111	2,078	7,299	198,908	29.7	521,383,620
Subtotal Commercial	198,111	2,078	7,299	198,908	29.7	521,383,620
Transportation						
La Quinta, California						
Untitled						
Diesel	42,730	126	130	42,772	6.4	171,153,503
Gasoline	203,023	14,276	12,120	207,703	31.1	839,245,614
Subtotal Untitled	245,753	14,402	12,250	250,475	37.5	1,010,399,117
Subtotal Transportation	245,753	14,402	12,250	250,475	37.5	1,010,399,117

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Community Greenhouse Gas Emissions in 2020
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Waste						
La Quinta, California						
Refuse/Residue						*Disposal Method - Managed Landfill*
Paper Products	0	0	463,054	9,724	1.5	
Food Waste	0	0	89,668	1,883	0.3	
Plant Debris	0	0	39,086	821	0.1	
Wood or Textiles	0	0	13,795	290	0.0	
Subtotal Refuse/Residue	0	0	605,602	12,718	1.9	
Subtotal Waste	0	0	605,602	12,718	1.9	
Total	649,587	18,488	633,755	668,627	100.0	2,123,752,802

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Community Greenhouse Gas Emissions in 2035
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Residential						
La Quinta, California						
Untitled						
Electricity	207,939	2,386	6,291	208,811	25.2	478,280,193
Natural Gas	45,227	85	4,262	45,342	5.5	249,743,071
Propane	261	2	46	263	0.0	1,214,365
Subtotal Untitled	253,427	2,474	10,599	254,416	30.7	729,237,629
Subtotal Residential	253,427	2,474	10,599	254,416	30.7	729,237,629
Commercial						
La Quinta, California						
Untitled						
Electricity	204,876	2,351	6,199	205,735	24.8	471,235,210
Natural Gas	23,511	44	2,215	23,571	2.8	129,828,071
Subtotal Untitled	228,387	2,396	8,414	229,306	27.7	601,063,281
Subtotal Commercial	228,387	2,396	8,414	229,306	27.7	601,063,281
Transportation						
La Quinta, California						
Untitled						
Diesel	55,981	165	170	56,035	6.8	224,228,206
Gasoline	265,980	18,703	15,879	272,112	32.8	1,099,495,684
Subtotal Untitled	321,961	18,868	16,049	328,147	39.6	1,323,723,890
Subtotal Transportation	321,961	18,868	16,049	328,147	39.6	1,323,723,890

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Community Greenhouse Gas Emissions in 2035
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Waste						
La Quinta, California						
Refuse/Residue						*Disposal Method - Managed Landfill*
Paper Products	0	0	606,915	12,745	1.5	
Food Waste	0	0	117,526	2,468	0.3	
Plant Debris	0	0	51,229	1,076	0.1	
Wood or Textiles	0	0	18,081	380	0.0	
Subtotal Refuse/Residue	0	0	793,750	16,669	2.0	
Subtotal Waste	0	0	793,750	16,669	2.0	
Total	803,775	23,738	828,812	828,538	100.0	2,654,024,800

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions in 2035

Summary Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)
Residential	253,427	2,474	10,599	254,416	30.7	729,237,629
Commercial	228,387	2,396	8,414	229,306	27.7	601,063,281
Transportation	321,961	18,868	16,049	328,147	39.6	1,323,723,890
Waste	0	0	793,750	16,669	2.0	
Total	803,775	23,738	828,812	828,538	100.0	2,654,024,800

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2020

Target Year Measures Summary

Measures Summary	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
Residential Sector	70,998	678	3,063	71,272	28.1	133,350,576	0
Commercial Sector	78,154	838	2,759	78,472	30.9	157,394,784	0
Transportation Sector	95,535	3,167	231	96,522	38.0	401,672,768	0
Waste Sector	0	0	365,874	7,683	3.0		0
Total	244,688	4,683	371,926	253,950	100.0	692,418,128	0

Climate Action Plan	(tonnes eCO2)
Base Year 2005 Emissions	460,946
Target Year 2020 Emissions Forecast	668,627
Target Emissions Level	414,852
Emissions Reductions Required to Meet Target	253,776
Emissions Reductions in Climate Action Plan as of 2020	253,950

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2020
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
Residential Sector							
La Quinta, California							
Change in Energy Source							
R-C1 Nat Gas 2035	2,872	5	271	2,879	1.1	10,644,026	0
R-C1: New Homes Use Solar	8,863	102	268	8,900	3.5	0	0
R-C1: New Homes Use Solar	0	0	0	0	0.0	0	0
R-C2 Nat Gas 2035 solar	3,812	7	359	3,822	1.5	0	0
R-C2: Increase Solar 2020	12,781	147	387	12,834	5.1	0	0
R-C2: Increase Solar 2035	0	0	0	0	0.0	0	0
R-C3: Expand Renewable Gri	0	0	0	0	0.0	0	0
R-C3: Expand Renewable Gri	0	0	0	0	0.0	0	0
Energy Efficiency: Appliances and Equipment							
R-B1: Upgrade Appliances 20	10,892	106	454	10,935	4.3	31,322,912	0
R-B1: Upgrade Appliances 20	0	0	0	0	0.0	0	0
Energy Efficiency: Buildings							
R-A1: New Homes 40% more	15,106	147	630	15,165	6.0	43,440,405	0
R-A1: New Homes 70% more	0	0	0	0	0.0	0	0
R-A2: Retrofit Existing Homes	7,780	76	324	7,811	3.1	22,373,509	0
R-A2: Retrofit Existing Homes	0	0	0	0	0.0	0	0
R-A3 Residential Net Zero 20	8,892	87	371	8,926	3.5	25,569,724	0
R-A3 Residential Net Zero 20	0	0	0	0	0.0	0	0
Subtotal Residential	70,998	678	3,063	71,272	28.1	133,350,576	0
Commercial Sector							
La Quinta, California							
Change in Energy Source							
C-C1: Source Expansion of	18,349	211	555	18,426	7.3	0	0
C-C1: Source Expansion of	0	0	0	0	0.0	0	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2020
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
Energy Efficiency: Buildings							
C-A1: Net Zero Energy Demai	14,758	155	544	14,817	5.8	38,839,154	0
C-A1: Net Zero Energy Demai	0	0	0	0	0.0	0	0
C-A2 Net-Zero Retrofit 2020	36,038	378	1,328	36,183	14.2	94,844,504	0
C-A2 Net-Zero Retrofit 2035	0	0	0	0	0.0	0	0
Energy Efficiency: Equipment and Lighting							
C-B1: Upgrade equipment 202	9,010	95	332	9,046	3.6	23,711,126	0
C-B1: Upgrade equipment 203	0	0	0	0	0.0	0	0
Subtotal Commercial	78,154	838	2,759	78,472	30.9	157,394,784	0
Transportation Sector							
La Quinta, California							
Change in Fuel Type or Technology							
LT-A3: Reduce Diesel Increas	235	0	-2	235	0.1	1,074,452	0
LT-A3: Reduce Gas Increase	7,132	607	399	7,328	2.9	33,017,808	0
LT-A3: Reduce Gas Increase	0	0	0	0	0.0	0	0
LT-A3:Reduce Diesel Increase	0	0	0	0	0.0	0	0
P-A1: Increase Use of Electric	8,097	762	660	8,347	3.3	39,236,766	0
P-A1: Increase Use of Electric	0	0	0	0	0.0	0	0
P-A1: Replace Diesel Passen	47	0	0	47	0.0	216,758	0
P-A1: Replace Diesel Passen	0	0	0	0	0.0	0	0
Increase in Fuel Efficiency							
HD-G1: Increase Fuel Efficier	6,643	0	0	6,643	2.6	26,610,133	0
LTD-G1: Increase Fuel Efficie	267	0	0	267	0.1	1,068,844	0
LTG-G1: Increase Fuel Efficie	7,821	0	0	7,821	3.1	32,329,341	0
P-G1: Increase Fuel Efficiency	34,514	0	0	34,514	13.6	142,671,661	0
Other VMT Reduction							
CNG-D-5: 2020 Signal Sync	78	17	194	88	0.0	432,503	0
CNG-D-5: 2035 Signal Sync	0	0	0	0	0.0	0	0
HD-D4: Signal Synchronizatio	2,740	8	9	2,743	1.1	10,974,993	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2020
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
HD-D4: Signal Synchronizatio	0	0	0	0	0.0	0	0
LTD-D2: Signal Synchronizati	207	1	0	207	0.1	828,484	0
LTD-D2: Signal Synchronizati	0	0	0	0	0.0	0	0
LTG-D3: Signal Synchronizati	5,993	416	302	6,129	2.4	24,775,553	0
LTG-D3: Signal Synchronizati	0	0	0	0	0.0	0	0
P-D1: Signal Synchronization	8,688	617	584	8,891	3.5	35,912,762	0
P-D1: Signal Synchronization	0	0	0	0	0.0	0	0
Switch to Public Transport							
LTD-B2: Expand Public Trans	79	-3	-38	77	0.0	293,808	0
LTD-B2: Expand Public Trans	0	0	0	0	0.0	0	0
LTG-B3: Expand Public Trans	2,348	104	-815	2,364	0.9	9,194,371	0
LTG-B3: Expand Public Trans	0	0	0	0	0.0	0	0
PG-B1: Expand Public Transp	2,681	81	-1,554	2,674	1.1	10,122,542	0
PG-B1: Expand Public Transp	0	0	0	0	0.0	0	0
Walking/Biking							
LTD-C2: Expand Alt Transpor	78	0	0	78	0.0	313,108	0
LTD-C2: Expand Alt Transpor	0	0	0	0	0.0	0	0
LTG-C3: Expand Alt Transpor	2,265	157	114	2,316	0.9	9,363,398	0
LTG-C3: Expand Alt Transpor	0	0	0	0	0.0	0	0
PG-C1: Expand Alt Transport	5,621	399	378	5,753	2.3	23,235,483	0
PG-C1: Expand Alt Transport	0	0	0	0	0.0	0	0
Subtotal Transportation	95,535	3,167	231	96,522	38.0	401,672,768	0
Waste Sector							
La Quinta, California							
Landfilling to Composting							
W-1 Divert Food Waste 2020	0	0	20,175	424	0.2		0
W-1 Divert Food Waste 2035	0	0	0	0	0.0		0
Landfilling to Recycling							
W-2 Divert Paper Waste 2035	0	0	0	0	0.0		0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2020
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
W-2 DivertPaper Waste 2020	0	0	118,341	2,485	1.0		0
Landfilling to Composting							
W-3 Divert Plant Waste 2020	0	0	19,543	410	0.2		0
W-3 Divert Plant Waste 2035	0	0	0	0	0.0		0
Landfilling to Recycling							
W-4: Divert Misc Waste	0	0	27,813	584	0.2		0
W-4: Divert Misc Waste 2035	0	0	0	0	0.0		0
Landfilling to Reduction							
W-5: Divert Foor Waste Streai	0	0	897	19	0.0		0
W-5: Reduce Foor Waste Stre	0	0	0	0	0.0		0
W-6: Reduce Paper Waste Sti	0	0	179,105	3,761	1.5		0
W-6: Reduce Paper Waste Sti	0	0	0	0	0.0		0
Subtotal Waste	0	0	365,874	7,683	3.0		0
Total	244,688	4,683	371,926	253,950	100.0	692,418,128	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2035

Target Year Measures Summary

Measures Summary	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
Residential Sector	157,016	1,544	6,473	157,631	31.7	305,831,239	0
Commercial Sector	141,869	1,507	5,102	142,443	28.7	323,583,547	0
Transportation Sector	174,143	8,523	2,427	176,836	35.6	775,420,768	0
Waste Sector	0	0	941,463	19,771	4.0		0
Total	473,028	11,574	955,465	496,681	100.0	1,404,835,554	0

Climate Action Plan	(tonnes eCO2)
Base Year 2005 Emissions	460,946
Target Year 2035 Emissions Forecast	828,538
Target Emissions Level	331,881
Emissions Reductions Required to Meet Target	496,657
Emissions Reductions in Climate Action Plan as of 2035	496,681

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2035
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
Residential Sector							
La Quinta, California							
Change in Energy Source							
R-C1 Nat Gas 2035	4,103	8	387	4,113	0.8	15,205,751	0
R-C1: New Homes Use Solar	8,863	102	268	8,900	1.8	0	0
R-C1: New Homes Use Solar	12,661	145	383	12,714	2.6	0	0
R-C2 Nat Gas 2035 solar	4,765	9	449	4,778	1.0	0	0
R-C2: Increase Solar 2020	12,781	147	387	12,834	2.6	0	0
R-C2: Increase Solar 2035	12,781	147	387	12,834	2.6	0	0
R-C3: Expand Renewable Gri	0	0	0	0	0.0	0	0
R-C3: Expand Renewable Gri	0	0	0	0	0.0	0	0
Energy Efficiency: Appliances and Equipment							
R-B1: Upgrade Appliances 20	10,892	106	454	10,935	2.2	31,322,912	0
R-B1: Upgrade Appliances 20	10,892	106	454	10,935	2.2	31,322,912	0
Energy Efficiency: Buildings							
R-A1: New Homes 40% more	15,106	147	630	15,165	3.1	43,440,405	0
R-A1: New Homes 70% more	30,828	301	1,285	30,949	6.2	88,652,792	0
R-A2: Retrofit Existing Homes	7,780	76	324	7,811	1.6	22,373,509	0
R-A2: Retrofit Existing Homes	7,780	76	324	7,811	1.6	22,373,509	0
R-A3 Residential Net Zero 20	8,892	87	371	8,926	1.8	25,569,724	0
R-A3 Residential Net Zero 20	8,892	87	371	8,926	1.8	25,569,724	0
Subtotal Residential	157,016	1,544	6,473	157,631	31.7	305,831,239	0
Commercial Sector							
La Quinta, California							
Change in Energy Source							
C-C1: Source Expansion of	18,916	217	572	18,995	3.8	0	0
C-C1: Source Expansion of	0	0	0	0	0.0	0	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2035
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
Energy Efficiency: Buildings							
C-A1: Net Zero Energy Dema	14,758	155	544	14,817	3.0	38,839,154	0
C-A1: Net Zero Energy Dema	6,465	68	238	6,491	1.3	17,015,248	0
C-A2 Net-Zero Retrofit 2020	36,038	378	1,328	36,183	7.3	94,844,504	0
C-A2 Net-Zero Retrofit 2035	45,048	473	1,660	45,229	9.1	118,555,593	0
Energy Efficiency: Equipment and Lighting							
C-B1: Upgrade equipment 20	9,010	95	332	9,046	1.8	23,711,126	0
C-B1: Upgrade equipment 20	11,634	122	429	11,681	2.4	30,617,922	0
Subtotal Commercial	141,869	1,507	5,102	142,443	28.7	323,583,547	0
Transportation Sector							
La Quinta, California							
Change in Fuel Type or Technology							
LT-A3: Reduce Diesel Increas	235	0	-2	235	0.0	1,074,452	0
LT-A3: Reduce Gas Increase	7,132	607	399	7,328	1.5	33,017,808	0
LT-A3: Reduce Gas Increase	18,417	1,865	1,133	19,019	3.8	94,698,456	0
LT-A3:Reduce Diesel Increas	187	-6	-22	184	0.0	2,109,808	0
P-A1: Increase Use of Electric	8,097	762	660	8,347	1.7	39,236,766	0
P-A1: Increase Use of Electric	18,901	2,326	1,879	19,662	4.0	108,412,599	0
P-A1: Replace Diesel Passen	47	0	0	47	0.0	216,758	0
P-A1: Replace Diesel Passen	117	-1	-2	117	0.0	607,632	0
Increase in Fuel Efficiency							
HD-G1: Increase Fuel Efficier	9,491	0	0	9,491	1.9	38,014,475	0
LTD-G1: Increase Fuel Efficie	381	0	0	381	0.1	1,526,919	0
LTG-G1: Increase Fuel Efficie	11,173	0	0	11,173	2.2	46,184,773	0
P-G1: Increase Fuel Efficiency	49,306	0	0	49,306	9.9	203,816,658	0
Other VMT Reduction							
CNG-D-5: 2020 Signal Sync	78	17	194	88	0.0	432,503	0
CNG-D-5: 2035 Signal Sync	74	19	215	85	0.0	409,866	0
HD-D4: Signal Synchronizatio	2,740	8	9	2,743	0.6	10,974,993	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2035
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
HD-D4: Signal Synchronizatio	1,214	4	4	1,215	0.2	4,861,922	0
LTD-D2: Signal Synchronizati	207	1	0	207	0.0	828,484	0
LTD-D2: Signal Synchronizati	75	0	0	75	0.0	300,994	0
LTG-D3: Signal Synchronizati	5,993	416	302	6,129	1.2	24,775,553	0
LTG-D3: Signal Synchronizati	2,177	151	110	2,227	0.4	9,001,129	0
P-D1: Signal Synchronization	8,688	617	584	8,891	1.8	35,912,762	0
P-D1: Signal Synchronization	2,702	192	181	2,765	0.6	11,168,251	0
Switch to Public Transport							
LTD-B2: Expand Public Trans	79	-3	-38	77	0.0	293,808	0
LTD-B2: Expand Public Trans	62	-2	-29	61	0.0	234,547	0
LTG-B3: Expand Public Trans	2,348	104	-815	2,364	0.5	9,194,371	0
LTG-B3: Expand Public Trans	1,851	81	-632	1,863	0.4	7,296,706	0
PG-B1: Expand Public Transp	2,681	81	-1,554	2,674	0.5	10,122,542	0
PG-B1: Expand Public Transp	2,136	63	-1,204	2,130	0.4	8,163,163	0
Walking/Biking							
LTD-C2: Expand Alt Transpor	78	0	0	78	0.0	313,108	0
LTD-C2: Expand Alt Transpor	145	0	0	146	0.0	582,569	0
LTG-C3: Expand Alt Transpor	2,265	157	114	2,316	0.5	9,363,398	0
LTG-C3: Expand Alt Transpor	4,214	293	213	4,310	0.9	17,421,540	0
PG-C1: Expand Alt Transport	5,621	399	378	5,753	1.2	23,235,483	0
PG-C1: Expand Alt Transport	5,229	371	351	5,352	1.1	21,615,970	0
Subtotal Transportation	174,143	8,523	2,427	176,836	35.6	775,420,768	0
Waste Sector							
La Quinta, California							
Landfilling to Composting							
W-1 Divert Food Waste 2020	0	0	20,175	424	0.1		0
W-1 Divert Food Waste 2035	0	0	5,223	110	0.0		0
Landfilling to Recycling							
W-2 Divert Paper Waste 2035	0	0	73,532	1,544	0.3		0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Community Greenhouse Gas Emissions Reductions in 2035
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
W-2 DivertPaper Waste 2020	0	0	118,341	2,485	0.5		0
Landfilling to Composting							
W-3 Divert Plant Waste 2020	0	0	19,543	410	0.1		0
W-3 Divert Plant Waste 2035	0	0	3,036	64	0.0		0
Landfilling to Recycling							
W-4: Divert Misc Waste	0	0	278,126	5,841	1.2		0
W-4: Divert Misc Waste 2035	0	0	172,806	3,629	0.7		0
Landfilling to Reduction							
W-5: Divert Foor Waste Streai	0	0	8,966	188	0.0		0
W-5: Reduce Foor Waste Stre	0	0	6,964	146	0.0		0
W-6: Reduce Paper Waste Sti	0	0	179,105	3,761	0.8		0
W-6: Reduce Paper Waste Sti	0	0	55,645	1,169	0.2		0
Subtotal Waste	0	0	941,463	19,771	4.0		0
Total	473,028	11,574	955,465	496,681	100.0	1,404,835,554	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

APPENDIX C

La Quinta General Plan

Greenhouse Gas Reduction Plan

Output Tables
Municipal Analysis

Clean Air Climate Protection 2009 Software
Version 2.2.1b

Prepared by

Terra Nova Planning & Research, Inc.®
42635 Melanie Place, Suite #101
Palm Desert, CA 92211

May 31, 2012

La Quinta

Government Greenhouse Gas Emissions in 2005

Summary Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Cost ($)
Buildings and Facilities	2,258	27	79	2,268	23.1	5,630,760	0
Streetlights & Traffic Signals	570	7	18	573	5.8	1,311,439	0
Water Delivery Facilities	6,139	77	192	6,167	62.9	14,122,310	0
Vehicle Fleet	437	31	33	447	4.6	1,811,861	0
Employee Commute	344	22	20	352	3.6	1,418,206	0
Total	9,749	164	342	9,807	100.0	24,294,576	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Government Greenhouse Gas Emissions in 2005
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Cost ($)
Buildings and Facilities							
La Quinta, California							
Civic Center							
Electricity	498	6	16	501	5.1	1,146,400	0
Natural Gas	86	0	8	86	0.9	472,597	0
Subtotal Civic Center	584	6	24	586	6.0	1,618,997	0
Fire Station 32							
Electricity	25	0	1	25	0.3	57,040	0
Subtotal Fire Station 32	25	0	1	25	0.3	57,040	0
Fire Station 70							
Electricity	28	0	1	29	0.3	65,280	0
Subtotal Fire Station 70	28	0	1	29	0.3	65,280	0
Fire Station 93							
Electricity	40	1	1	40	0.4	92,240	0
Natural Gas	6	0	1	6	0.1	34,552	0
Subtotal Fire Station 93	46	1	2	47	0.5	126,792	0
Library							
Electricity	221	3	7	222	2.3	509,120	0
Natural Gas	9	0	1	9	0.1	47,365	0
Subtotal Library	230	3	8	231	2.4	556,485	0
Parks and Recreation							
Electricity	216	3	7	217	2.2	496,710	0
Subtotal Parks and Recreation	216	3	7	217	2.2	496,710	0
Police							
Electricity	36	0	1	36	0.4	82,650	0
Subtotal Police	36	0	1	36	0.4	82,650	0

Government Greenhouse Gas Emissions in 2005
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Cost ($)
Public Works							
Electricity	34	0	1	34	0.3	77,720	0
Subtotal Public Works	34	0	1	34	0.3	77,720	0
Senior Center							
Electricity	90	1	3	90	0.9	207,200	0
Natural Gas	35	0	3	35	0.4	192,777	0
Subtotal Senior Center	125	1	6	125	1.3	399,977	0
Silver Rock							
Electricity	934	12	29	939	9.6	2,149,110	0
Subtotal Silver Rock	934	12	29	939	9.6	2,149,110	0
Subtotal Buildings and Facilities	2,258	27	79	2,268	23.1	5,630,760	0
Streetlights & Traffic Signals							
La Quinta, California							
Untitled							
Electricity	570	7	18	573	5.8	1,311,439	0
Subtotal Untitled	570	7	18	573	5.8	1,311,439	0
Subtotal Streetlights & Traffic Si	570	7	18	573	5.8	1,311,439	0
Water Delivery Facilities							
La Quinta, California							
CVWD							
Electricity	6,139	77	192	6,167	62.9	14,122,310	0
Subtotal CVWD	6,139	77	192	6,167	62.9	14,122,310	0
Subtotal Water Delivery Facilities	6,139	77	192	6,167	62.9	14,122,310	0

Government Greenhouse Gas Emissions in 2005
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Cost ($)
Vehicle Fleet							
La Quinta, California							
Other City Vehicles							
Diesel	16	0	0	16	0.2	64,349	0
Gasoline	57	4	3	59	0.6	237,265	0
Subtotal Other City Vehicles	73	4	3	75	0.8	301,614	0
Police							
Gasoline	263	19	17	269	2.7	1,088,135	0
Subtotal Police	263	19	17	269	2.7	1,088,135	0
Public Works							
Compressed Natural Gas	6	1	8	6	0.1	31,625	0
Diesel	1	0	0	1	0.0	2,705	0
Gasoline	94	7	5	96	1.0	387,781	0
Subtotal Public Works	100	8	13	103	1.0	422,111	0
Subtotal Vehicle Fleet	437	31	33	447	4.6	1,811,861	0
Employee Commute							
La Quinta, California							
Untitled							
Diesel	34	0	0	34	0.3	136,738	0
Gasoline	310	22	20	317	3.2	1,281,468	0
Subtotal Untitled	344	22	20	352	3.6	1,418,206	0
Subtotal Employee Commute	344	22	20	352	3.6	1,418,206	0
Total	9,749	164	342	9,807	100.0	24,294,576	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions in 2020

Summary Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Cost ($)
Buildings and Facilities	2,446	27	83	2,456	21.7	6,093,943	0
Streetlights & Traffic Signals	804	9	24	808	7.1	1,849,787	0
Water Delivery Facilities	7,291	84	221	7,322	64.6	16,770,243	0
Vehicle Fleet	410	28	32	419	3.7	1,699,478	0
Employee Commute	317	20	19	324	2.9	1,306,716	0
Total	11,269	167	379	11,328	100.0	27,720,167	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Government Greenhouse Gas Emissions in 2020
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Cost ($)
Buildings and Facilities							
La Quinta, California							
Civic Center							
Electricity	498	6	15	501	4.4	1,146,400	0
Natural Gas	86	0	8	86	0.8	472,597	0
Subtotal Civic Center	584	6	23	586	5.2	1,618,997	0
Fire Station 32							
Electricity	31	0	1	31	0.3	70,507	0
Subtotal Fire Station 32	31	0	1	31	0.3	70,507	0
Fire Station 70							
Electricity	35	0	1	35	0.3	80,693	0
Subtotal Fire Station 70	35	0	1	35	0.3	80,693	0
Fire Station 93							
Electricity	50	1	1	50	0.4	114,018	0
Natural Gas	8	0	1	8	0.1	42,709	0
Subtotal Fire Station 93	57	1	2	58	0.5	156,727	0
Library							
Electricity	263	3	8	264	2.3	604,580	0
Natural Gas	10	0	1	10	0.1	56,246	0
Subtotal Library	273	3	9	274	2.4	660,826	0
Museum							
Electricity	51	1	2	51	0.4	116,400	0
Subtotal Museum	51	1	2	51	0.4	116,400	0
Parks and Recreation							
Electricity	256	3	8	258	2.3	589,843	0
Subtotal Parks and Recreation	256	3	8	258	2.3	589,843	0

Government Greenhouse Gas Emissions in 2020
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Cost ($)
Police							
Electricity	43	0	1	43	0.4	98,147	0
Subtotal Police	43	0	1	43	0.4	98,147	0
Public Works							
Electricity	34	0	1	34	0.3	77,720	0
Subtotal Public Works	34	0	1	34	0.3	77,720	0
Senior Center							
Electricity	107	1	3	107	0.9	246,050	0
Natural Gas	41	0	4	42	0.4	228,923	0
Subtotal Senior Center	148	1	7	149	1.3	474,973	0
Silver Rock							
Electricity	934	11	28	938	8.3	2,149,110	0
Subtotal Silver Rock	934	11	28	938	8.3	2,149,110	0
Subtotal Buildings and Facilities	2,446	27	83	2,456	21.7	6,093,943	0
Streetlights & Traffic Signals							
La Quinta, California							
Untitled							
Electricity	804	9	24	808	7.1	1,849,787	0
Subtotal Untitled	804	9	24	808	7.1	1,849,787	0
Subtotal Streetlights & Traffic Si	804	9	24	808	7.1	1,849,787	0
Water Delivery Facilities							
La Quinta, California							
CVWD							
Electricity	7,291	84	221	7,322	64.6	16,770,243	0
Subtotal CVWD	7,291	84	221	7,322	64.6	16,770,243	0
Subtotal Water Delivery Facilities	7,291	84	221	7,322	64.6	16,770,243	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Government Greenhouse Gas Emissions in 2020
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Cost ($)
Vehicle Fleet							
La Quinta, California							
Other City Vehicles							
Diesel	17	0	0	17	0.1	66,559	0
Gasoline	58	4	3	59	0.5	239,590	0
Subtotal Other City Vehicles	75	4	3	76	0.7	306,149	0
Police							
Gasoline	234	17	16	239	2.1	966,093	0
Subtotal Police	234	17	16	239	2.1	966,093	0
Public Works							
Compressed Natural Gas	6	1	8	6	0.1	32,858	0
Diesel	1	0	0	1	0.0	2,798	0
Gasoline	95	7	5	97	0.9	391,581	0
Subtotal Public Works	101	7	13	104	0.9	427,237	0
Subtotal Vehicle Fleet	410	28	32	419	3.7	1,699,478	0
Employee Commute							
La Quinta, California							
Untitled							
Diesel	35	0	0	35	0.3	142,071	0
Gasoline	282	20	19	288	2.5	1,164,645	0
Subtotal Untitled	317	20	19	324	2.9	1,306,716	0
Subtotal Employee Commute	317	20	19	324	2.9	1,306,716	0
Total	11,269	167	379	11,328	100.0	27,720,167	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions in 2035

Summary Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Cost ($)
Buildings and Facilities	2,584	28	88	2,595	20.5	6,441,644	0
Streetlights & Traffic Signals	824	9	25	828	6.5	1,895,783	0
Water Delivery Facilities	8,449	97	256	8,484	67.0	19,432,493	0
Vehicle Fleet	420	28	33	429	3.4	1,741,288	0
Employee Commute	329	21	20	336	2.7	1,355,765	0
Total	12,606	184	421	12,671	100.0	30,866,972	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Government Greenhouse Gas Emissions in 2035
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Cost ($)
Buildings and Facilities							
La Quinta, California							
Civic Center							
Electricity	498	6	15	501	3.9	1,146,400	0
Natural Gas	86	0	8	86	0.7	472,597	0
Subtotal Civic Center	584	6	23	586	4.6	1,618,997	0
Fire Station 32							
Electricity	37	0	1	37	0.3	83,974	0
Subtotal Fire Station 32	37	0	1	37	0.3	83,974	0
Fire Station 70							
Electricity	42	0	1	42	0.3	96,105	0
Subtotal Fire Station 70	42	0	1	42	0.3	96,105	0
Fire Station 93							
Electricity	59	1	2	59	0.5	135,796	0
Natural Gas	9	0	1	9	0.1	50,867	0
Subtotal Fire Station 93	68	1	3	69	0.5	186,663	0
Library							
Electricity	304	3	9	306	2.4	700,040	0
Natural Gas	12	0	1	12	0.1	65,127	0
Subtotal Library	316	4	10	317	2.5	765,167	0
Museum							
Electricity	51	1	2	51	0.4	116,400	0
Subtotal Museum	51	1	2	51	0.4	116,400	0
Parks and Recreation							
Electricity	297	3	9	298	2.4	683,571	0
Subtotal Parks and Recreation	297	3	9	298	2.4	683,571	0

Government Greenhouse Gas Emissions in 2035
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Cost ($)
Police							
Electricity	49	1	1	50	0.4	113,644	0
Subtotal Police	49	1	1	50	0.4	113,644	0
Public Works							
Electricity	34	0	1	34	0.3	77,720	0
Subtotal Public Works	34	0	1	34	0.3	77,720	0
Senior Center							
Electricity	124	1	4	124	1.0	285,086	0
Natural Gas	48	0	5	48	0.4	265,207	0
Subtotal Senior Center	172	2	8	173	1.4	550,293	0
Silver Rock							
Electricity	934	11	28	938	7.4	2,149,110	0
Subtotal Silver Rock	934	11	28	938	7.4	2,149,110	0
Subtotal Buildings and Facilities	2,584	28	88	2,595	20.5	6,441,644	0
Streetlights & Traffic Signals							
La Quinta, California							
Untitled							
Electricity	824	9	25	828	6.5	1,895,783	0
Subtotal Untitled	824	9	25	828	6.5	1,895,783	0
Subtotal Streetlights & Traffic Si	824	9	25	828	6.5	1,895,783	0
Water Delivery Facilities							
La Quinta, California							
CVWD							
Electricity	8,449	97	256	8,484	67.0	19,432,493	0
Subtotal CVWD	8,449	97	256	8,484	67.0	19,432,493	0
Subtotal Water Delivery Facilities	8,449	97	256	8,484	67.0	19,432,493	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

Government Greenhouse Gas Emissions in 2035
Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Cost ($)
Vehicle Fleet							
La Quinta, California							
Other City Vehicles							
Diesel	17	0	0	17	0.1	69,058	0
Gasoline	60	4	3	61	0.5	248,583	0
Subtotal Other City Vehicles	77	4	3	79	0.6	317,641	0
Police							
Gasoline	237	17	16	243	1.9	980,371	0
Subtotal Police	237	17	16	243	1.9	980,371	0
Public Works							
Compressed Natural Gas	6	1	9	7	0.1	34,091	0
Diesel	1	0	0	1	0.0	2,904	0
Gasoline	98	7	5	101	0.8	406,281	0
Subtotal Public Works	105	7	14	108	0.9	443,275	0
Subtotal Vehicle Fleet	420	28	33	429	3.4	1,741,288	0
Employee Commute							
La Quinta, California							
Untitled							
Diesel	37	0	0	37	0.3	147,403	0
Gasoline	292	21	20	299	2.4	1,208,362	0
Subtotal Untitled	329	21	20	336	2.7	1,355,765	0
Subtotal Employee Commute	329	21	20	336	2.7	1,355,765	0
Total	12,606	184	421	12,671	100.0	30,866,972	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2020

Target Year Measures Summary

Measures Summary	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
Buildings and Facilities Sector	472	5	16	474	18.8	287,159	0
Streetlights & Traffic Signals Se	108	1	3	109	4.3	240,472	0
Water Delivery Facilities Sector	1,750	20	53	1,757	69.9	961,568	0
Vehicle Fleet Sector	149	1	1	149	5.9	617,124	0
Employee Commute Sector	25	1	-10	25	1.0	115,486	0
Total	2,504	29	63	2,514	100.0	2,221,809	0

Climate Action Plan	(tonnes eCO2)
Base Year 2005 Emissions	9,807
Target Year 2020 Emissions Forecast	11,328
Target Emissions Level	8,826
Emissions Reductions Required to Meet Target	2,502
Emissions Reductions in Climate Action Plan as of 2020	2,514

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2020

Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
Buildings and Facilities Sector							
La Quinta, California							
Change in Energy Source							
CC-C1: Increase Green Energ	91	1	3	91	3.6	0	0
CC-C1: Increase Green Energ	0	0	0	0	0.0	0	0
F32-C1: Increase Green Ener	0	0	0	0	0.0	0	0
F32-C1: Solar Onsite 2010	43	0	1	44	1.7	0	0
L-C3: Increase Green Energy	53	1	2	53	2.1	0	0
L-C3: Increase Green Energy	0	0	0	0	0.0	0	0
SC-C2: Increase Green Ener	21	0	1	21	0.9	0	0
SC-C2: Increase Green Ener	0	0	0	0	0.0	0	0
SR-C1: Solar Onsite 2020	187	2	6	188	7.5	0	0
SR-D1: Solar Onsite 2035	0	0	0	0	0.0	0	0
Energy Efficiency: Equipment and Lighting							
CC-B1: Automate HVAC Syst	38	0	3	38	1.5	199,286	0
CC-B2: Occupancy Sensors 2	25	0	1	26	1.0	58,600	0
CC-B2: Occupancy Sensors 2	0	0	0	0	0.0	0	0
CC-B3: Computer Power Mng	13	0	0	13	0.5	29,273	0
Subtotal Buildings and Facilities	472	5	16	474	18.8	287,159	0
Streetlights & Traffic Signals Sector							
La Quinta, California							
Energy Efficiency: Reduce Hours of Operation							
SL-B1: Minimize hours of	64	1	2	65	2.6	147,983	0
SL-B1: Minimize hours of	0	0	0	0	0.0	0	0
Reduce Number of Lights							
SL-D1: Remove Lights 2020	40	0	1	40	1.6	92,489	0
SL-D1: Remove Lights 2035	0	0	0	0	0.0	0	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2020

Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
Use of Solar Electricity							
SL-C1: Increase Use of Greer	0	0	0	0	0.0	0	0
SL-C1: Increase Use of Greer	4	0	0	4	0.1	0	0
Subtotal Streetlights & Traffic Si	108	1	3	109	4.3	240,472	0
Water Delivery Facilities Sector							
La Quinta, California							
Change in Energy Source							
W-C1: Green Electricity Is Use	1,385	16	42	1,391	55.3	123,056	0
W-C1: Green Electricity Is Use	0	0	0	0	0.0	0	0
Energy Efficiency: Equipment and Lighting							
W-B1: Increase Transport	365	4	11	366	14.6	838,512	0
W-B1: Increase Transport	0	0	0	0	0.0	0	0
Subtotal Water Delivery Facilities	1,750	20	53	1,757	69.9	961,568	0
Vehicle Fleet Sector							
La Quinta, California							
Increase in Fuel Efficiency							
LD-F1: Fuel Standard Increas	1	0	0	1	0.0	6,572	0
LD-F1: Fuel Standard Increas	0	0	0	0	0.0	0	0
LD-F1: Fuel Standard Increas	3	0	0	3	0.1	13,758	0
LD-F1: Fuel Standard Increas	0	0	0	0	0.0	0	0
LD-F1: Fuel Standard Increas	31	0	0	31	1.2	126,184	0
LD-F1: Fuel Standard Increas	0	0	0	0	0.0	0	0
P-F1: Fuel Standard Increases	94	0	0	94	3.7	387,115	0
P-F1: Fuel Standard Increases	0	0	0	0	0.0	0	0
Other VMT Reduction							
LD-D1: Signal Synch CNG 20	0	0	0	0	0.0	164	0
LD-D1: Signal Synch CNG 20	0	0	0	0	0.0	0	0
LT-D1: Signal Synch Diesel 2(	1	0	0	1	0.0	3,467	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2020

Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
LT-D1: Signal Synch Diesel 2(	0	0	0	0	0.0	0	0
LT-D1: Signal Synch Gas 202	8	1	0	8	0.3	31,559	0
LT-D1: Signal Synch Gas 203	0	0	0	0	0.0	0	0
P-D1: Signal Synch Police 20:	12	1	1	12	0.5	48,305	0
P-D1: Signal Synch Police 20:	0	0	0	0	0.0	0	0
Subtotal Vehicle Fleet	149	1	1	149	5.9	617,124	0
Employee Commute Sector							
La Quinta, California							
Change in Fuel Type							
E-1: Staff Uses Electric Vehicl	2	0	0	2	0.1	10,029	0
E-1: Staff Uses Electric Vehicl	0	0	0	0	0.0	0	0
E-1: Staff Uses Electric Vehicl	12	2	1	13	0.5	71,671	0
E-1: Staff Uses Electric Vehicl	0	0	0	0	0.0	0	0
Increase in Fuel Efficiency							
F-1: Fuel Standard Increase	0	0	0	0	0.0	0	0
F-1: Fuel Standard Increase	0	0	0	0	0.0	1,089	0
F-1: Fuel Standard Increase G	0	0	0	0	0.0	0	0
F-1: Fuel Standard IncreaseG	2	0	0	2	0.1	9,002	0
Other VMT Reduction							
D-1: Signal Synch Diesel 202(	0	0	0	0	0.0	0	0
D-1: Signal Synch Diesel 203:	0	0	0	0	0.0	224	0
D-1: Signal Synch Gas 2020	0	0	0	0	0.0	0	0
D-1: Signal Synch Gas 2035	0	0	0	0	0.0	1,897	0
Switch to Public Transport							
BC-1: 5 Employees Use Publi	1	0	-1	1	0.0	2,894	0
BC-1: 5 Employees Use Publi	0	0	0	0	0.0	0	0
BC-1: 5 Employees Use Publi	6	0	-10	6	0.2	18,678	0
BC-1: 5 Employees Use Publi	0	0	0	0	0.0	0	0
Subtotal Employee Commute	25	1	-10	25	1.0	115,486	0
Total	2,504	29	63	2,514	100.0	2,221,809	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2035

Target Year Measures Summary

Measures Summary	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
Buildings and Facilities Sector	1,065	12	34	1,070	19.1	404,359	0
Streetlights & Traffic Signals Se	596	7	18	598	10.7	947,916	0
Water Delivery Facilities Sector	3,486	40	105	3,500	62.4	1,891,267	0
Vehicle Fleet Sector	237	4	5	239	4.3	983,273	0
Employee Commute Sector	205	6	-16	207	3.7	898,744	0
Total	5,589	69	147	5,614	100.0	5,125,558	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2035

Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
Buildings and Facilities Sector							
La Quinta, California							
Change in Energy Source							
CC-C1: Increase Green Energ	91	1	3	91	1.6	0	0
CC-C1: Increase Green Energ	174	2	5	175	3.1	0	0
F32-C1: Increase Green Ener	43	0	1	44	0.8	0	0
F32-C1: Solar Onsite 2010	43	0	1	44	0.8	0	0
L-C3: Increase Green Energy	53	1	2	53	0.9	0	0
L-C3: Increase Green Energy	17	0	1	17	0.3	0	0
SC-C2: Increase Green Ener	21	0	1	21	0.4	0	0
SC-C2: Increase Green Ener	7	0	0	7	0.1	0	0
SR-C1: Solar Onsite 2020	187	2	6	188	3.3	0	0
SR-D1: Solar Onsite 2035	302	3	9	303	5.4	0	0
Energy Efficiency: Equipment and Lighting							
CC-B1: Automate HVAC Syst	38	0	3	38	0.7	199,286	0
CC-B2: Occupancy Sensors 2	25	0	1	26	0.5	58,600	0
CC-B2: Occupancy Sensors 2	51	1	2	51	0.9	117,200	0
CC-B3: Computer Power Mng	13	0	0	13	0.2	29,273	0
Subtotal Buildings and Facilities	1,065	12	34	1,070	19.1	404,359	0
Streetlights & Traffic Signals Sector							
La Quinta, California							
Energy Efficiency: Reduce Hours of Operation							
SL-B1: Minimize hours of	64	1	2	65	1.2	147,983	0
SL-B1: Minimize hours of	190	2	6	191	3.4	436,950	0
Reduce Number of Lights							
SL-D1: Remove Lights 2020	40	0	1	40	0.7	92,489	0
SL-D1: Remove Lights 2035	118	1	4	118	2.1	270,494	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2035
Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
Use of Solar Electricity							
SL-C1: Increase Use of Greer	0	0	0	0	0.0	0	0
SL-C1: Increase Use of Greer	183	2	6	184	3.3	0	0
Subtotal Streetlights & Traffic Si	596	7	18	598	10.7	947,916	0
Water Delivery Facilities Sector							
La Quinta, California							
Change in Energy Source							
W-C1: Green Electricity Is Use	1,385	16	42	1,391	24.8	123,056	0
W-C1: Green Electricity Is Use	1,332	15	40	1,337	23.8	0	0
Energy Efficiency: Equipment and Lighting							
W-B1: Increase Transport	365	4	11	366	6.5	838,512	0
W-B1: Increase Transport	404	5	12	406	7.2	929,699	0
Subtotal Water Delivery Facilities	3,486	40	105	3,500	62.4	1,891,267	0
Vehicle Fleet Sector							
La Quinta, California							
Increase in Fuel Efficiency							
LD-F1: Fuel Standard Increas	1	0	0	1	0.0	6,572	0
LD-F1: Fuel Standard Increas	1	0	0	1	0.0	2,922	0
LD-F1: Fuel Standard Increas	3	0	0	3	0.1	13,758	0
LD-F1: Fuel Standard Increas	2	0	0	2	0.0	6,181	0
LD-F1: Fuel Standard Increas	31	0	0	31	0.5	126,184	0
LD-F1: Fuel Standard Increas	14	0	0	14	0.2	57,403	0
P-F1: Fuel Standard Increases	94	0	0	94	1.7	387,115	0
P-F1: Fuel Standard Increases	30	0	0	30	0.5	124,035	0
Other VMT Reduction							
LD-D1: Signal Synch CNG 20	0	0	0	0	0.0	1,644	0
LD-D1: Signal Synch CNG 20	1	0	1	1	0.0	3,408	0
LT-D1: Signal Synch Diesel 2(	1	0	0	1	0.0	3,467	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2035

Target Year Measures Detailed Report

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (kWh)	Energy Cost Savings ($)
LT-D1: Signal Synch Diesel 2(	2	0	0	2	0.0	7,196	0
LT-D1: Signal Synch Gas 202	8	1	0	8	0.1	31,559	0
LT-D1: Signal Synch Gas 203	16	1	1	16	0.3	65,487	0
P-D1: Signal Synch Police 20:	12	1	1	12	0.2	48,305	0
P-D1: Signal Synch Police 20:	24	2	2	24	0.4	98,037	0
Subtotal Vehicle Fleet	237	4	5	239	4.3	983,273	0
Employee Commute Sector							
La Quinta, California							
Change in Fuel Type							
E-1: Staff Uses Electric Vehicl	2	0	0	2	0.0	10,029	0
E-1: Staff Uses Electric Vehicl	0	0	0	0	0.0	2,243	0
E-1: Staff Uses Electric Vehicl	12	2	1	13	0.2	71,671	0
E-1: Staff Uses Electric Vehicl	28	3	3	29	0.5	160,309	0
Increase in Fuel Efficiency							
F-1: Fuel Standard Increase	0	0	0	0	0.0	0	0
F-1: Fuel Standard Increase	14	0	0	14	0.2	54,461	0
F-1: Fuel Standard Increase G	0	0	0	0	0.0	0	0
F-1: Fuel Standard IncreaseG	109	0	0	109	1.9	450,106	0
Other VMT Reduction							
D-1: Signal Synch Diesel 202(	0	0	0	0	0.0	0	0
D-1: Signal Synch Diesel 203:	3	0	0	3	0.0	11,215	0
D-1: Signal Synch Gas 2020	0	0	0	0	0.0	0	0
D-1: Signal Synch Gas 2035	23	2	2	23	0.4	94,860	0
Switch to Public Transport							
BC-1: 5 Employees Use Publi	1	0	-1	1	0.0	2,894	0
BC-1: 5 Employees Use Publi	1	0	0	1	0.0	5,565	0
BC-1: 5 Employees Use Publi	6	0	-10	6	0.1	18,678	0
BC-1: 5 Employees Use Publi	6	0	-9	5	0.1	16,712	0
Subtotal Employee Commute	205	6	-16	207	3.7	898,744	0
Total	5,589	69	147	5,614	100.0	5,125,558	0

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.

La Quinta

Government Greenhouse Gas Emissions Reductions in 2035

Target Year Measures Summary

Measures Summary	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (kWh)	Energy Cost Savings ($)
Buildings and Facilities Sector	1,065	12	34	1,070	19.1	404,359	0
Streetlights & Traffic Signals Se	596	7	18	598	10.7	947,916	0
Water Delivery Facilities Sector	3,486	40	105	3,500	62.4	1,891,267	0
Vehicle Fleet Sector	237	4	5	239	4.3	983,273	0
Employee Commute Sector	205	6	-16	207	3.7	898,744	0
Total	5,589	69	147	5,614	100.0	5,125,558	0

Climate Action Plan	(tonnes eCO2)
Base Year 2005 Emissions	9,807
Target Year 2035 Emissions Forecast	12,671
Target Emissions Level	7,061
Emissions Reductions Required to Meet Target	5,610
Emissions Reductions in Climate Action Plan as of 2035	5,614

This report has been generated for La Quinta, California using ICLEI's Clean Air and Climate Protection 2009 Software.